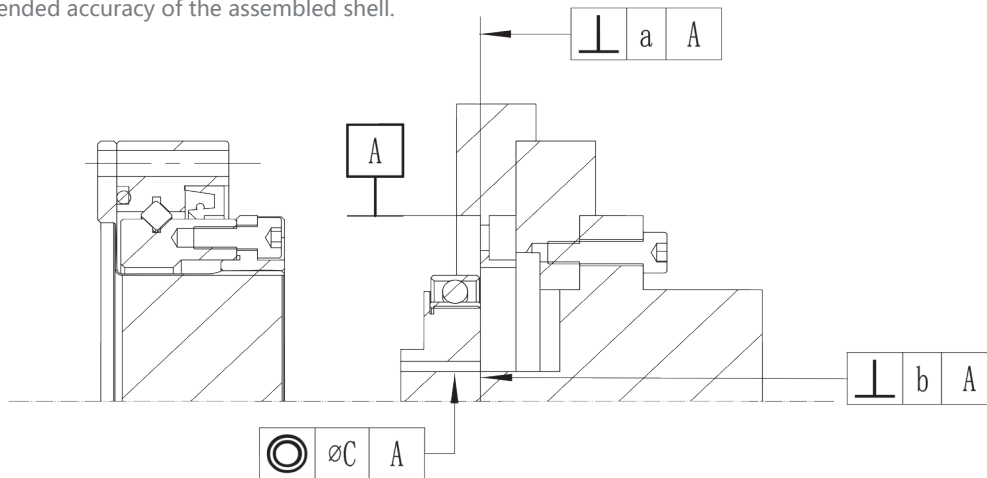


GHS Series Installation Instruction

■ Assembling Precision

During the assembly, if there are abnormalities such as deformation of the mounting surface and reluctant assembly, the product performance will be degraded or even damaged. As shown in the figure below, the following table is the recommended accuracy of the assembled shell.



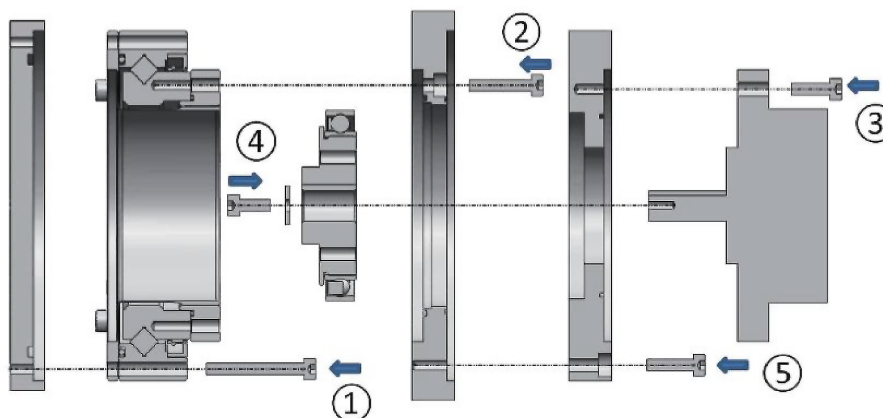
Size	14	17	20	25	32
a	0.011	0.015	0.017	0.024	0.026
b	0.017 (0.008)	0.020 (0.010)	0.020 (0.010)	0.024 (0.012)	0.024 (0.012)
c	0.030 (0.016)	0.034 (0.018)	0.044 (0.019)	0.047 (0.022)	0.047 (0.022)

the data in () is the value of the integrated wave generator

■ Installation Method and Step

■ Method 1

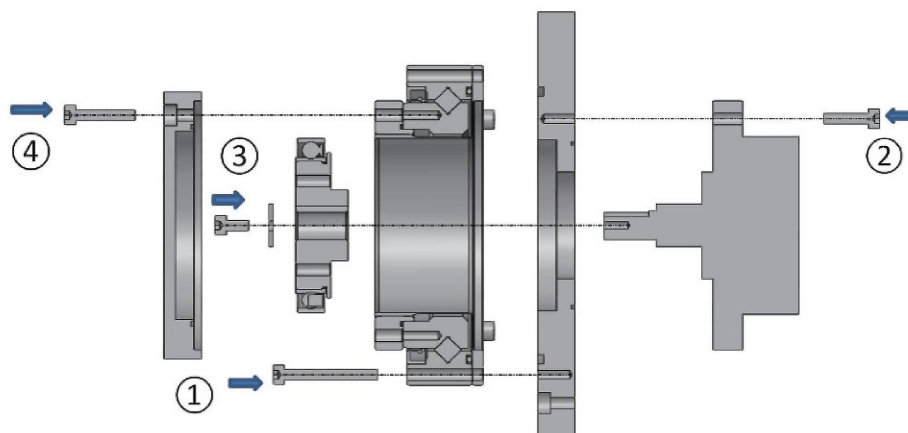
(Circular spline fixed, flex spin output, the speed ratio is standard ratio)



- ①Put the speed reducer fixed on the flange
- ②Connect the input fixed flange with circular spline
- ③Install the flange for motor mounting on the mounting surface of the motor
- ④Mount the wave generator to the input shaft of motor
- ⑤Connect the flange for motor mounting with input fixed flange
- ⑥Set the speed of the motor around 100r/min. start the motor. Fasten the screw in cross way, increase evenly 4 to 5 times to match the locking force of the screw . To prevent failure or loosening during work, all screws must be grade 12.9 and coated with Loctite 242 thread-locking fluid

■ Method 2

(Flex spline fixed , circular spline output , the speed ratio is the standard ratio +1)



① Fix the speed reducer on the input fixed flange

② Mounting the input fixed flange on the mounting surface of the motor

③ Mounting the wave generator on the input shaft of motor

④ Connect the output flange with circular spline

⑤ Set the speed of the motor around 100r/min. start the motor. Fasten the screw in cross way, increase evenly 4 to 5 times to match the locking force of the screw. To prevent failure or loosening during work, all screws must be grade 12.9 and coated with Loctite 242 thread-locking fluid

Remark

1. When simple combination ex-factory, the outer ring of the cross roller bearing and flex spine are temporarily fixed .
2. Please fill the gap between the wave generator and mounting flange of motor with grease when the wave generator facing up or down
3. It may cause poor lubrication when the wave generator is in the status of facing upside and use the speed reducer with constant load and low-speed rotation (input speed: low 1000r/min) in a single direction

■ Installation Precaution

The speed reducer may vibrate and cause abnormal noise when assemble in the wrong way, please comply with the below precautions

■ Precaution of Wave generator

1. Avoid overload pressed on the position of wave generator bearing when assembling. The wave generator can be inserted smoothly by rotating.
2. Please pay attention to control the influence of center offset and skew within the recommended value, when using integrated wave generator

■ Precaution of circular spline and flex spline

1. Make sure the surface of installation is flat, not slanting
2. Make sure there are no upheaval, rough edges and foreign matters in the hole of the screw
3. Make sure there are chamfering processing and avoiding processing on the position of case installation, to avoid interfere with circular spline
4. Make sure the circular spline can be rotated when it assembling to shell, check if there is any position interfere or stuck
5. Make sure the position of screw holes are exact and check if there is a connection between bolt with circular spline /flex spline due to the skew processing of bolt, which makes the rotation of bolt heavy
6. Do not tighten the bolts to the specified torque all at once. Please temporarily tighten it with a force of approximately 1/2 of the specified torque, and then tighten it to the specified torque. In addition, tighten the bolts in diagonal order usually.
7. Check whether there is extreme unilateral engaged when the flexspline is combined with the circular spline. When a one-sided offset occurs, it may be due to a center offset or skewing of the two components
8. Pins to the circular may low rotation accuracy, so please avoid is if possible
9. Please do not tap the front end of the gear at the opening or press it with excessive force when assembling the flex spline
10. Check whether there is extreme unilateral engaged when the circular spline is combined with the circular spline. When a one-sided offset occurs, it may be due to a center offset or skewing of the two component

■ Precautions for Grease

- 1.The flexible bearing needs to be evenly coated with grease, and the cavity formed by the connection between the motor and the mounting flange needs to be filled with 80% grease.
- 2.The inner wall of the flexspline needs to be evenly coated with grease, and the cavity formed by the connection between the flexspline and the flange needs to be filled with 80% grease.
- 3.There is no grease applied to the other parts except the root of the tooth of the simple combination reducer, please apply the remaining parts according to the specific situation
- 4.The performance of grease will change by temperature, the higher the temperature, the faster the deterioration. In order to ensure the grease always in good condition, the heat balance temperature of the high temperature section of the reducer should be lower than 70°C, and the temperature rise should be lower than 40°C.
- 5.The wear of each moving part of the reducer is mainly affected by the performance of the grease. The grease should be replaced every 3000 hours of operation for the harmonic drive if possible.

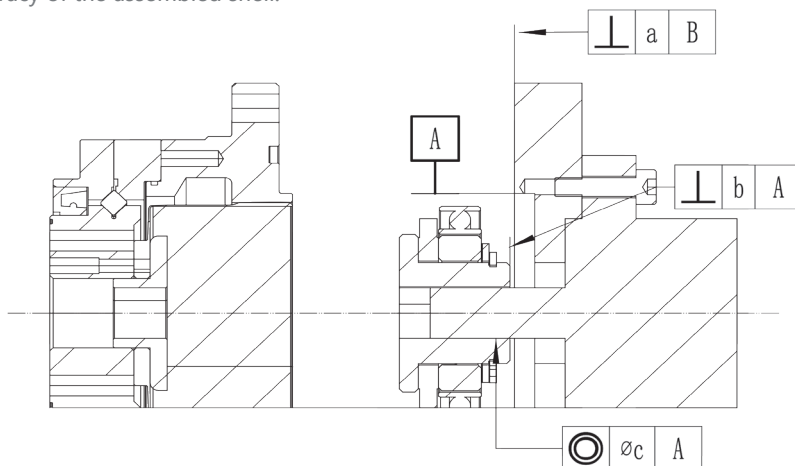
■ Other Considerations

1. To avoid damage during use, the harmonic drive must be installed under a clean environment, and no foreign matter can enter the reducer during the installation
2. Please make sure the surface of the gear and flexible bearing of the reducer always fully lubricated. It is not recommended to make the face of the tooth always facing upwards, which will affect the lubrication effects
3. Install the flex spline and circular spline on the device firstly, then assemble the wave generator
4. When install the machine, the long axis of the wave generator is aligned with the long axis of the flexspline of the reducer. Then fix the reducer with the corresponding screw, and tighten the it slightly.
5. Please confirm that engagement between the flex spline and circular spline are 180° symmetrical, after assembling of the wave generator
6. Once finish installation, please run it at a low speed (100rpm) first, if there is abnormal vibration and noise, please stop it immediately, and check whether the installation is correct or not , or contact us .To avoid damage from incorrect installation
7. The requirements for the installation plane for reducer are: flatness 0.01mm, perpendicularity to the axis 0.01mm, and concentricity of the threaded hole or through hole to the axis 0.1 mm.
8. To prevent grease leakage and maintain the durability of the reducer, corresponding sealing mechanisms must be used for different positions, such as: oil seals for rotating motion, O-rings for mating surfaces of various parts, and screw glue for screw holes.
- 9.Please strictly follow the pocket hole of the reducer in the drawings to confirm the design of the flange and wave generator. If the exceeded pocket hole, it will cause interference between the flexspline and the flange or the wave generator, affect the service life of the reducer.
- 10.The installation design of the reducer should be according to the installation depth requirements of the wave generator. The different installation depth of the reducer will affect the starting torque and accuracy of the reducer.
- 11.There is no anti-rust treatment on the surface of the reducer. If rust prevention required, apply the rust inhibitor to the surface.

GHC Series Installation Instruction

■ Assembling Precision

During the assembly, if there are abnormalities such as deformation of the mounting surface and reluctant assembly, the product performance will be degraded or even damaged. As shown in the figure below, the following table is the recommended accuracy of the assembled shell.



Size	14	17	20	25	32
a	0.011	0.015	0.017	0.024	0.026
b	0.017 (0.008)	0.020 (0.010)	0.020 (0.010)	0.024 (0.012)	0.024 (0.012)
c	0.030 (0.016)	0.034 (0.018)	0.044 (0.019)	0.047 (0.022)	0.047 (0.022)

the data in() is the value of the integrated wave generator

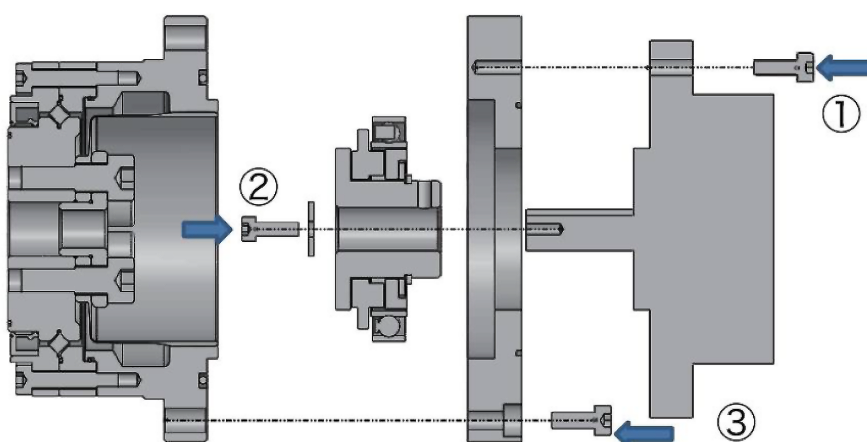
■ Installation Method and Step

The installation method of motor installation must be applied when assembling the motor to speed reducer

Installation Method and Step as below

(Circular spline fixed, flex spin output, the speed ratio is standard ratio)

■ Method 1



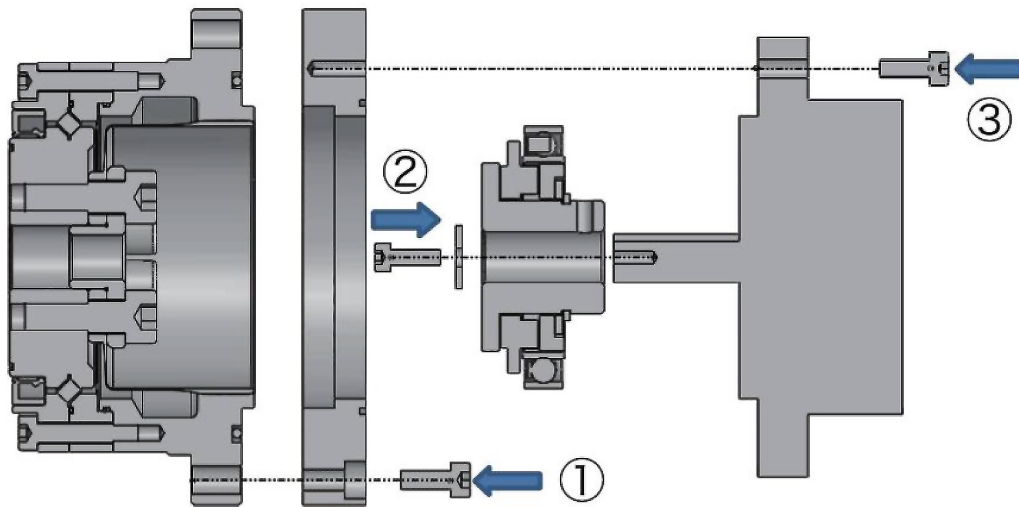
①Install the flange for motor mounting on the mounting surface of the motor

②Mount the wave generator to the output shaft of motor

③Assemble the mainframe of the speed reducer

④Set the speed of the motor around 100r/min. start the motor. Fasten the screw in cross way, increase evenly 4 to 5 times to match the locking force of the screw . To prevent failure or loosening during work, all screws must be grade 12.9 and coated with Loctite 242 thread-locking fluid

Method 2



- ① Install the flange to the mainframe of the speed reducer
- ② Install the wave generator to the output shaft of the motor
- ③ Install the flange for motor mounting on the mounting surface of the motor
- ④ Set the speed of the motor around 100r/min. start the motor. Fasten the screw in cross way, increase evenly 4 to 5 times to match the locking force of the screw . To prevent failure or loosening during work, all screws must be grade 12.9 and coated with Loctite 242 thread-locking fluid

Remark: Please fill the gap between the wave generator and mounting flange of motor with grease when the wave generator facing up or down

Installation Precaution

The speed reducer may vibrate and cause abnormal noise when assemble in the wrong way, please comply with the below precautions

Precaution of Wave generator

1. Avoid overload pressed on the position of wave generator bearing when assembling. The wave generator can be inserted smoothly by rotating.
2. Please pay attention to control the influence of center offset and skew within the recommended value, when using integrated wave generator.

Precaution of circular spline and flex spline

1. Make sure the surface of installation is flat, not slanting
2. Make sure there are no upheaval, rough edges and foreign matters in the hole of the screw
3. Make sure there are chamfering processing and avoiding processing on the position of case installation, to avoid interfere with circular spline

Precautions for Grease

1. The flexible bearing needs to be evenly coated with grease, and the cavity formed by the connection between the motor and the mounting flange needs to be filled with 80% grease.
2. The inner wall of the flexspline needs to be evenly coated with grease, and the cavity formed by the connection between the flexspline and the flange needs to be filled with 80% grease.
3. The performance of grease will change by temperature, the higher the temperature, the faster the deterioration. In order to ensure the grease always in good condition, the heat balance temperature of the high temperature section of the reducer should be lower than 70°C, and the temperature rise should be lower than 40°C.
4. The wear of each moving part of the reducer is mainly affected by the performance of the grease. The grease should be replaced every 3000 hours of operation for the harmonic drive if possible.

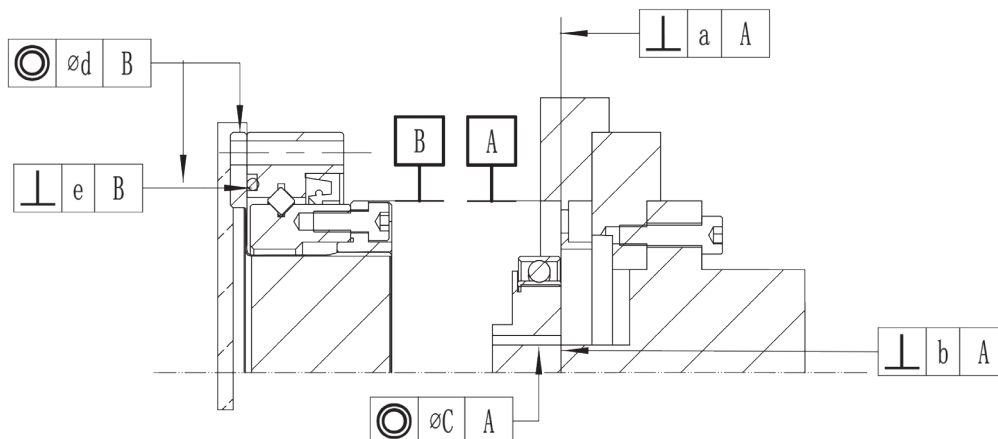
■ Other Considerations

1. To avoid damage during use, the harmonic drive must be installed under a clean environment, and no foreign matter can enter the reducer during the installation
2. Please make sure the surface of the gear and flexible bearing of the reducer always fully lubricated. It is not recommended to make the face of the tooth always facing upwards, which will affect the lubrication effects
3. Install the flex spline and circular spline on the device firstly, then assemble the wave generator
4. When install the machine, the long axis of the wave generator is aligned with the long axis of the flexspline of the reducer. Then fix the reducer with the corresponding screw, and tighten the it slightly.
5. Please confirm that engagement between the flex spline and circular spline are 180° symmetrical, after assembling of the wave generator
6. Once finish installation, please run it at a low speed (100rpm) first, if there is abnormal vibration and noise, please stop it immediately, and check whether the installation is correct or not , or contact us .To avoid damage from incorrect installation
7. The requirements for the installation plane for reducer are: flatness 0.01mm, perpendicularity to the axis 0.01mm, and concentricity of the threaded hole or through hole to the axis 0.1 mm.
8. To prevent grease leakage and maintain the durability of the reducer, corresponding sealing mechanisms must be used for different positions, such as: oil seals for rotating motion, O-rings for mating surfaces of various parts, and screw glue for screw holes.
9. Please strictly follow the pocket hole of the reducer in the drawings to confirm the design of the flange and wave generator. If the exceeded pocket hole, it will cause interference between the flexspline and the flange or the wave generator, affect the service life of the reducer.
10. The installation design of the reducer should be according to the installation depth requirements of the wave generator. The different installation depth of the reducer will affect the starting torque and accuracy of the reducer.
11. There is no anti-rust treatment on the surface of the reducer. If rust prevention required, apply the rust inhibitor to the surface.

GHD Series Installation Instruction

Assembling Precision

During the assembly, if there are abnormalities such as deformation of the mounting surface and reluctant assembly, the product performance will be degraded or even damaged. As shown in the figure below, the following table is the recommended accuracy of the assembled shell. The picture below takes the simple combination hollow type speed reducer as an example



Size	14	17	20	25	32
a	0.011	0.015	0.017	0.024	0.026
b	0.017	0.020	0.020	0.024	0.024
	(0.008)	(0.010)	(0.010)	(0.012)	(0.012)
c	0.030	0.034	0.044	0.047	0.047
	(0.016)	(0.018)	(0.019)	(0.022)	(0.022)
d	0.015	0.018	0.019	0.022	0.022
e	0.016	0.021	0.027	0.035	0.042

The data in () is the value of the integrated wave generator

Installation Method and Step

The installation Method and steps are the same with GHS

Installation Precaution

The speed reducer may vibrate and cause abnormal noise when assemble in the wrong way, please comply with the below precaution

Precaution of Wave generator

1. Avoid overload pressed on the position of wave generator bearing when assembling. The wave generator can be inserted smoothly by rotating.
2. Please pay attention to control the influence of center offset and skew within the recommended value, when using integrated wave generator

Precaution of circular spline and flex spline

1. Make sure the surface of installation is flat, not slanting
2. Make sure there are no upheaval, rough edges and foreign matters in the hole of the screw
3. Make sure there are chamfering processing and avoiding processing on the position of case installation, to avoid interfere with circular spline
4. Make sure the circular spline can be rotated when it assembling to shell, check if there is any position interfere or stuck
5. Make sure the position of screw holes are exact and check if there is a connection between bolt with circular spline /flex spline due to the skew processing of bolt, which makes the rotation of bolt heavy
6. Do not tighten the bolts to the specified torque all at once. Please temporarily tighten it with a force of approximately 1/2 of the specified torque, and then tighten it to the specified torque. In addition, tighten the bolts in diagonal order usually.
7. Check whether there is extreme unilateral engaged when the flexspline is combined with the circular spline. When a one-sided offset occurs, it may be due to a center offset or skewing of the two components
8. Pins to the circular may low rotation accuracy, so please avoid it if possible
9. Please do not tap the front end of the gear at the opening or press it with excessive force when assembling the flex spline
10. Check whether there is extreme unilateral engaged when the circular spline is combined with the circular spline. When a one-sided offset occurs, it may be due to a center offset or skewing of the two components

■ Precautions for Grease

- 1.The flexible bearing needs to be evenly coated with grease, and the cavity formed by the connection between the motor and the mounting flange needs to be filled with 80% grease.
- 2.The inner wall of the flexspline needs to be evenly coated with grease, and the cavity formed by the connection between the flexspline and the flange needs to be filled with 80% grease.
- 3.There is no grease applied to the other parts except the root of the tooth of the simple combination reducer, please apply the remaining parts according to the specific situation
- 4.The performance of grease will change by temperature, the higher the temperature, the faster the deterioration. In order to ensure the grease always in good condition, the heat balance temperature of the high temperature section of the reducer should be lower than 70°C, and the temperature rise should be lower than 40°C.
- 5.The wear of each moving part of the reducer is mainly affected by the performance of the grease. The grease should be replaced every 3000 hours of operation for the harmonic drive if possible.

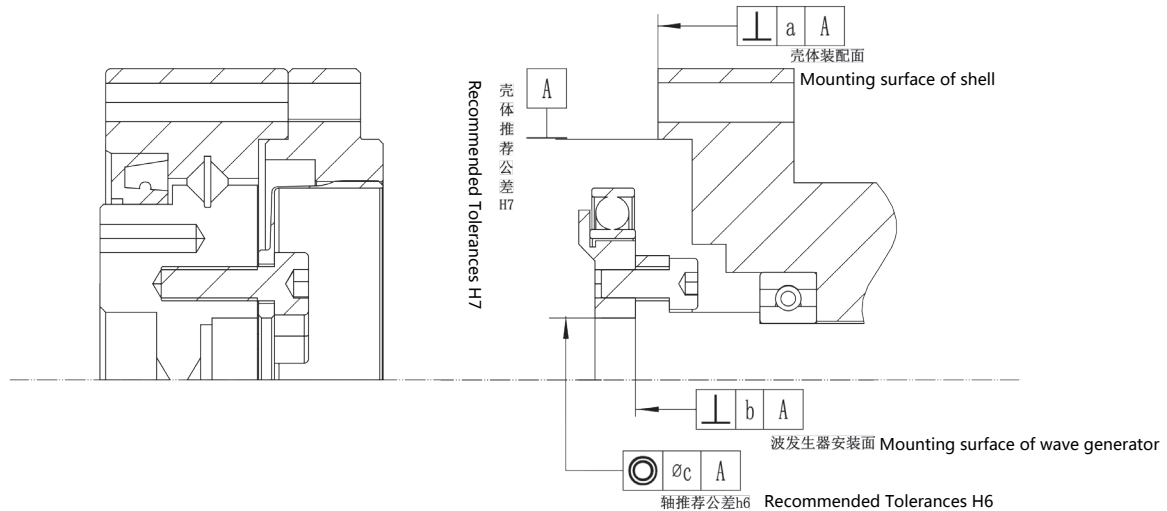
■ Other Considerations

1. To avoid damage during use, the harmonic drive must be installed under a clean environment, and no foreign matter can enter the reducer during the installation
2. Please make sure the surface of the gear and flexible bearing of the reducer always fully lubricated. It is not recommended to make the face of the tooth always facing upwards, which will affect the lubrication effects
3. Install the flex spline and circular spline on the device firstly, then assemble the wave generator
4. When install the machine, the long axis of the wave generator is aligned with the long axis of the flexspline of the reducer. Then fix the reducer with the corresponding screw, and tighten the it slightly.
5. Please confirm that engagement between the flex spline and circular spline are 180° symmetrical, after assembling of the wave generator
6. Once finish installation, please run it at a low speed (100rpm) first, if there is abnormal vibration and noise, please stop it immediately, and check whether the installation is correct or not , or contact us .To avoid damage from incorrect installation
7. The requirements for the installation plane for reducer are: flatness 0.01mm, perpendicularity to the axis 0.01mm, and concentricity of the threaded hole or through hole to the axis 0.1 mm.
8. To prevent grease leakage and maintain the durability of the reducer, corresponding sealing mechanisms must be used for different positions, such as: oil seals for rotating motion, O-rings for mating surfaces of various parts, and screw glue for screw holes.
- 9.Please strictly follow the pocket hole of the reducer in the drawings to confirm the design of the flange and wave generator. If the exceeded pocket hole, it will cause interference between the flexspline and the flange or the wave generator, affect the service life of the reducer.
- 10.The installation design of the reducer should be according to the installation depth requirements of the wave generator. The different installation depth of the reducer will affect the starting torque and accuracy of the reducer.
- 11.There is no anti-rust treatment on the surface of the reducer. If rust prevention required, apply the rust inhibitor to the surface.

GHT Series Installation Instruction

Assembling Precision

During the assembly, if there are abnormalities such as deformation of the mounting surface and reluctant assembly, the product performance will be degraded or even damaged. As shown in the figure below, the following table is the recommended accuracy of the assembled shell.



Size	14	17	20	25	32
a	0.011	0.015	0.017	0.024	0.026
b	0.008	0.010	0.012	0.012	0.012
c	0.016	0.018	0.019	0.022	0.022

Installation Method and Step

The installation method and steps are the same with GHT

Installation Precaution

The speed reducer may vibrate and cause abnormal noise when assemble in the wrong way, please comply with the below precautions

Precaution of wave generator

1. Avoid overload pressed on the position of wave generator bearing when assembling. The wave generator can be inserted smoothly by rotating.
2. Please pay attention to control the influence of center offset and skew within the recommended value, when using integrated wave generator

Precaution of circular spline and flex spline

1. Make sure the surface of installation is flat, not slanting
2. Make sure there are no upheaval, rough edges and foreign matters in the hole of the screw
3. Make sure there are chamfering processing and avoiding processing on the position of case installation, to avoid interfere with circular spline

Precautions for Grease

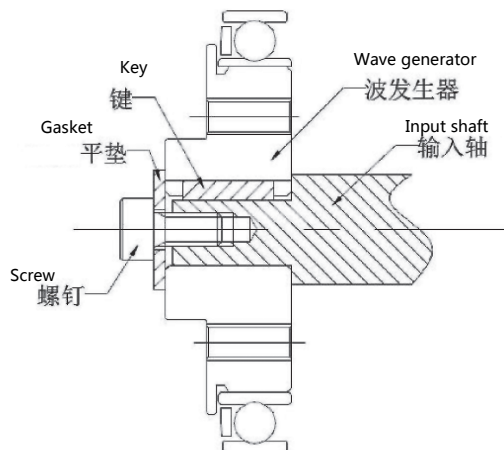
1. The flexible bearing needs to be evenly coated with grease, and the cavity formed by the connection between the motor and the mounting flange needs to be filled with 80% grease.
2. The inner wall of the flexspline needs to be evenly coated with grease, and the cavity formed by the connection between the flexspline and the flange needs to be filled with 80% grease.
3. The performance of grease will change by temperature, the higher the temperature, the faster the deterioration. In order to ensure the grease always in good condition, the heat balance temperature of the high temperature section of the reducer should be lower than 70°C, and the temperature rise should be lower than 40°C.
4. The wear of each moving part of the reducer is mainly affected by the performance of the grease. The grease should be replaced every 3000 hours of operation for the harmonic drive if possible.

■ Other Considerations

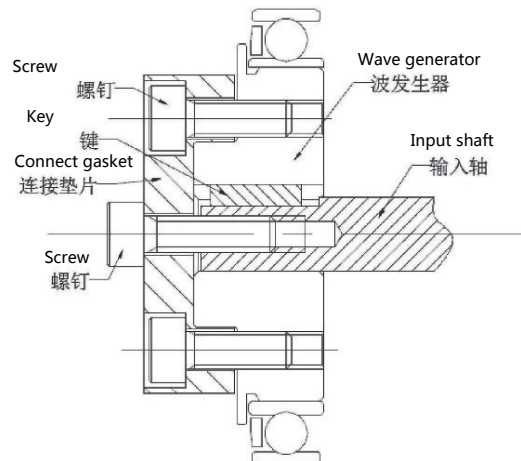
1. To avoid damage during use, the harmonic drive must be installed under a clean environment, and no foreign matter can enter the reducer during the installation
2. Please make sure the surface of the gear and flexible bearing of the reducer always fully lubricated. It is not recommended to make the face of the tooth always facing upwards, which will affect the lubrication effects
3. Install the flex spline and circular spline on the device firstly, then assemble the wave generator
4. When install the machine, the long axis of the wave generator is aligned with the long axis of the flexspline of the reducer. Then fix the reducer with the corresponding screw, and tighten the it slightly.
5. Please confirm that engagement between the flex spline and circular spline are 180° symmetrical, after assembling of the wave generator
6. Once finish installation, please run it at a low speed (100rpm) first, if there is abnormal vibration and noise, please stop it immediately, and check whether the installation is correct or not , or contact us .To avoid damage from incorrect installation
7. The requirements for the installation plane for reducer are: flatness 0.01mm, perpendicularity to the axis 0.01mm, and concentricity of the threaded hole or through hole to the axis 0.1 mm.
8. To prevent grease leakage and maintain the durability of the reducer, corresponding sealing mechanisms must be used for different positions, such as: oil seals for rotating motion, O-rings for mating surfaces of various parts, and screw glue for screw holes.
9. Please strictly follow the pocket hole of the reducer in the drawings to confirm the design of the flange and wave generator. If the exceeded pocket hole, it will cause interference between the flexspline and the flange or the wave generator, affect the service life of the reducer.
10. The installation design of the reducer should be according to the installation depth requirements of the wave generator. The different installation depth of the reducer will affect the starting torque and accuracy of the reducer.
11. There is no anti-rust treatment on the surface of the reducer. If rust prevention required, apply the rust inhibitor to the surface.

Connection & fixing method of Wave Generator

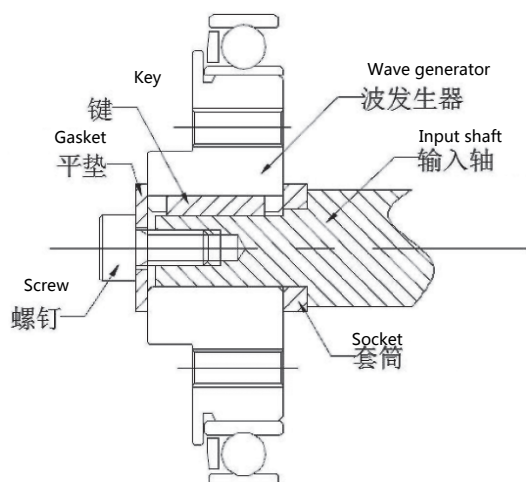
1. The input shaft has a shoulder, which can be connected and fixed with the wave generator directly. As shown below.



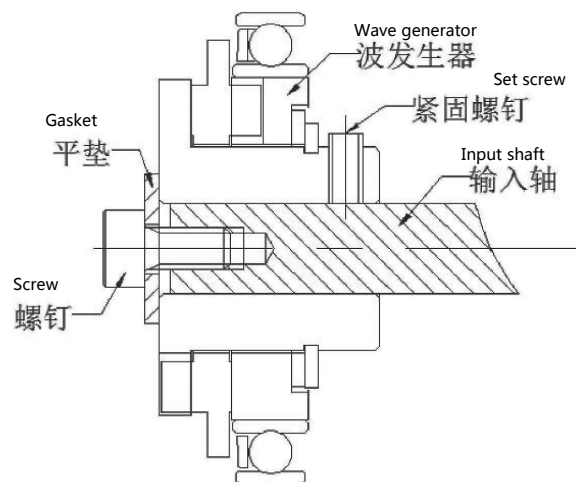
3. No shoulder on input shaft, a connected gasket needed to fix on the wave generator then connect with the input shaft. As shown below.



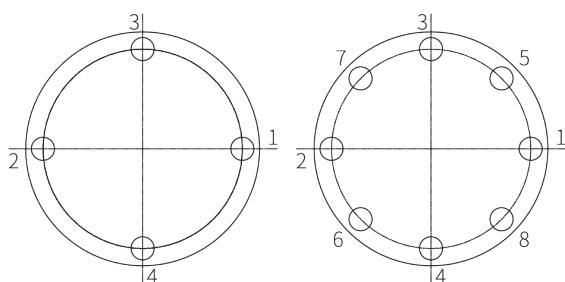
2. The input shaft has a shoulder, but it is long. The socket can be added to the shaft (the parallelism of the two sides of the socket must be within 0.01 mm) and then connected with the wave generator. As shown below.



4. For shaft input, insert the wave generator first, and connect the input shaft by tightening screws, which is suitable for small models. As shown below.



Screw Locking Method



Screw Locking Method

Screw Performance Grade	12.9 Grade						
Nominal Diameter of Thread mm	3	4	5	6	8	10	12
Tightening Torque N.m	2	4	9	15	35	70	125

Use of Grease

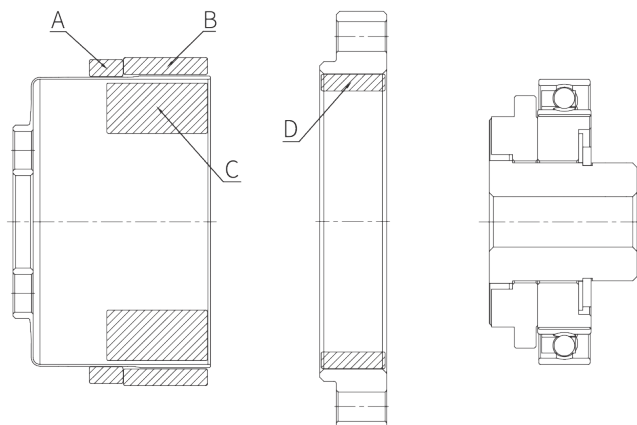
■ Precautions for the Use of Grease

- (1)The internal hidden part of the combination type reducer (cup-shaped and hollow shape) has been applied with grease before ex-factory. But grease also needed to applied when assembling the wave generator
- (2)The input and output of the harmonic reducer must be designed with a strict sealing structure. It is recommended to use a skeleton-type self-tightening oil seal grease seal for the dynamic sealing part. It is recommended to use an O-ring or sealant to seal the static seal, and it must be ensured that the sealing surface is not skewed or damaged.
- (3)Use the recommended semi-fluid grease for harmonic reducers, and avoid mixing with other greases.
- (4)The use of grease must comply with the requirements of the manual. Please note that the amount of grease injected and applied is different for different models.
- (5)During the use of the harmonic reducer, if the wave generator is always facing upwards, it may cause poor lubrication. At this time, increase the amount of grease injected or contact us
- (6)The performance of grease will change by temperature, the higher the temperature, the faster the deterioration. In order to ensure the grease always in good condition, the heat balance temperature of the high temperature section of the reducer should be lower than 70°C, and the temperature rise should be lower than 40°C.
- (7)The wear of each moving part of the reducer is mainly affected by the performance of the grease. The grease should be replaced every 3000 hours of operation for the harmonic drive if possible.

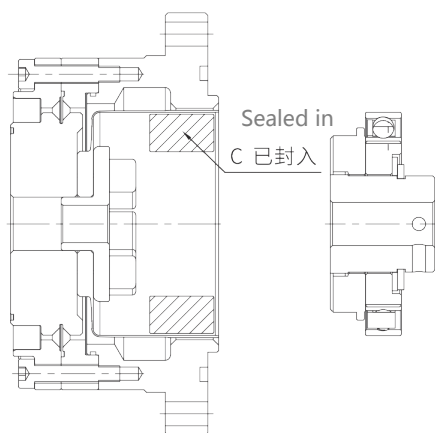
■ GHC、GHS Series Grease Application Volume

SIZE	Application Position					D	
	A	B	C		D		
			Horizontal Use	Vertical Use			
				Up			Down
14	0.3	0.3	6	8	9	0.3	
17	0.5	0.5	10	12	14	0.5	
20	0.8	0.8	16	18	21	0.8	
25	1.5	1.5	30	35	40	1.5	
32	3	3	60	70	80	3	

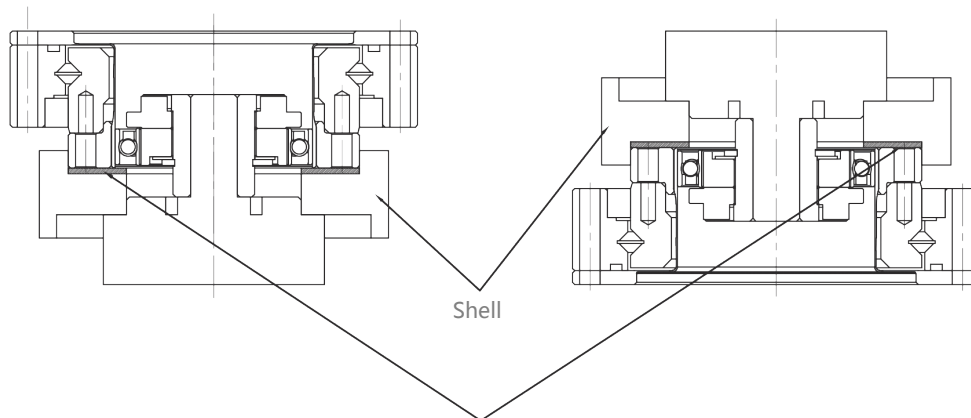
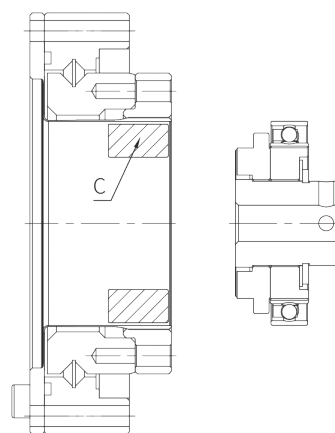
■ GHC-I Series Grease Application Position



■ GHC-A Series Grease Application Position



■ GHS-A Series Grease Application Position

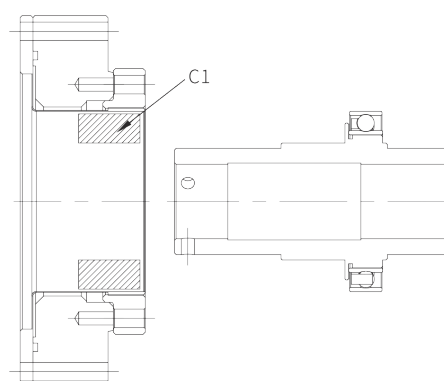


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■ GHS-K Series Grease Application Position

Size	Application Position
	C1
14	5.5
17	9.6
20	10.3
25	16
32	26

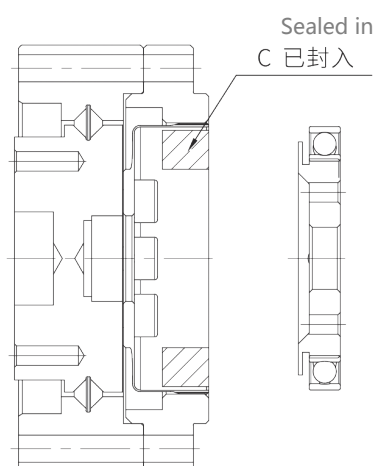
■ GHC-K Series Grease Application Position



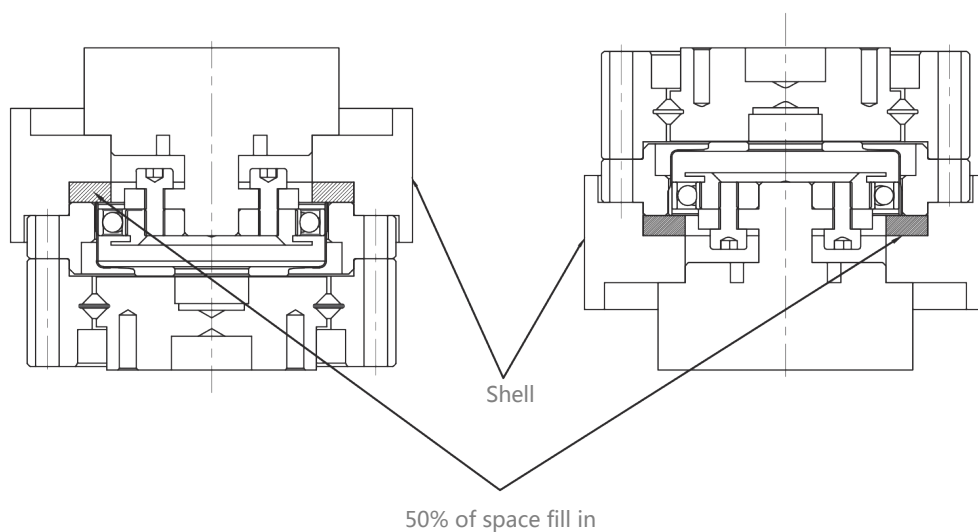
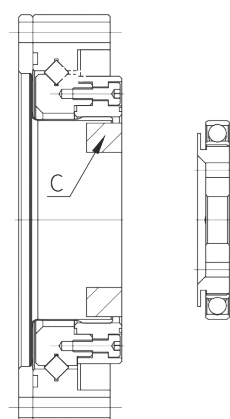
GHD、GHT Series Grease Application Position

SIZE	Application Position		
	C		
	Horizontal Use	Vertical Use	
		Up	Down
14	3	4	5
17	5	6	7
20	8	9	11
25	16	19	21
32	36	42	48

GHT Series Grease Application Position



GHD Series Grease Application Position



■ Replace Time of Grease

The wear of each moving part of the harmonic reducer is largely affected by the performance of the grease. The performance of grease will change according to temperature. The higher the temperature, the faster it will deteriorate. Therefore, it should be better to replace the grease as soon as possible. As shown in the figure below, when the average load torque is lower than the rated torque, the grease replacement time is determined by the relationship between the grease temperature and the total number of revolutions of the wave generator. When the average load torque exceeds the rated torque, the grease change time is calculated by the following formula.

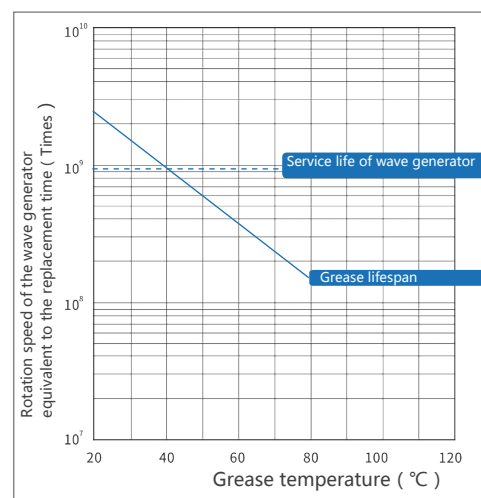
■ Formula (the average load torque exceeds the rated torque)

$$L_{GT} = L_{GTn} \times \left(\frac{T_r}{T_{av}} \right)^3$$

L_{GT}	Replace time (exceeds the rated torque)	Speed	-
L_{GTn}	Replace time (Lower than the rated torque)	Speed	Reference Picture at right
T_r	rated torque	N.m kgfm	Refer to the parameter table of each series
T_{av}	average load torque at output side	-	According to work condition

Grease replace time :

L_{GTn} (the average load torque lower than the rated torque)



波發生器的使用壽命表示破損率為 10%

■ Additional Notes :

① Please avoid mixing with other greases. In addition, please place the harmonic reducer in a separate housing when assembling it to the device.

② It may cause poor lubrication when the wave generator faces upward and rotates at a low speed (input speed: less than 1000r/min) with a fixed load in one direction. Please contact us when using the harmonic driver in this situation

③ About the grease leakage of the combined type

Although the combination type has taken measures to prevent grease leakage when designing the structure, please strengthen the sealing structure according to the operating environment

Precaution of the Use of Harmonic Drive

■ Precaution of design (Please read the specification when start design)

- Please comply with the following requirements when using harmonic driver

Environment temperature: 0 ~ 40°C

Avoid being splashed the water, oil etc.

No corroding, explosive gas, mental powder etc

- Please design and assemble the various components correctly to ensure that they can meet the recommended installation accuracy in the catalog.

Failure to achieve the specified accuracy may result in vibration and shortened service life.

- Please follow the correct assembly method and steps according to the product catalog. Please follow our recommendations for the screwing method (using bolts, etc.). If not assembled correctly, it may cause vibration, shortened service life, decreased accuracy, damage, and other failures

- Use the required grease. If not use the grease recommended by the company may shorten the service life of the product. In addition, please change the grease according to the specified conditions. The combination product is pre-applied with grease. Do not mix with other greases.

■ Precautions for use (When running, please read the instruction manual)

- Do not use a hammer or other force to strike components and combination units. In addition, please make sure that there will be no cracks, deflated marks, etc. due to drops, etc. Otherwise, the product may be damaged. The performance can't be ensured due to damage. It may cause malfunctions also

- The components of this product are processed as a set. When used in combination with other kits, it can not ensure it will perform as intended.

- Applied torque doesn't exceed the maximum allowable instant torque. Otherwise, the tightening bolts may loosen, shake, break, etc., resulting in malfunction

- It is not allowed to disassemble and reassemble. Otherwise, the original performance will not be restored.

■ About Scrapping

When scrapping, please treat it as industrial waste

■ Use of Grease

● Precaution

It may cause inflammation if splashed into the eyes. Please wear protective glasses

It may cause inflammation if skin contact. Please wear protective gloves etc., to avoid skin contact

Do not swallow (may cause diarrhea, vomiting, etc.).

Wear a protective glove to avoid fingers hurt when opening the container

Keep out of reach of children.

● Storage Method

After use, please seal it well to prevent dust and moisture from mixing in. Please keep it in a shady place and avoid direct sunlight. For long-term storage of products, it is recommended to check the performance and rust prevention. For surface treatment, please refer to the delivery drawing in detail.

● Emergency Treatment:

In case of eye contact, wash immediately with water for 15 minutes and receive medical attention.

In case of skin contact, wash well with water and soap.

In case of swallowing, please do not vomit and receive medical attention immediately.

● Treatment of waste oil and waste containers

Comply with the law stipulated treatment method. If not clear, please contact with us

Do not apply pressure to an empty container. it may cause a burst

Do not weld, heat, open or cut the container or an explosion may occur and the inside residue may catch fire and burn.