

Reliable JWA's Mark

June, 2017.

**The technical guidelines of the Industrial Safety and Health Research Institute recommend that gas torches (* 1) that exceed a certain period from the date of manufacture be periodically inspected by the manufacturer or the commercial agent specified by the manufacturer.
(JNIOOSH-TR-48:2017)**

(* 1) Cutting, welding and heating torch, and pressure regulators.

**Gas cutting/welding equipment are certified by
The Japan Welding Engineering Society.**

**The Japan Welding
Engineering Society**

CEP: 101-0025
4-20, Kanda-Sakuma-Cho, Chiyoda-Ku, Tokyo, Japan
TEL : 03-5823-6324 FAX : 03-5823-5244
<http://www.jwes.or.jp/>

Are you using the certified gas cutting/welding equipment?

Check the reliable  mark on your equipment for safety operation.

Features of gas cutting/welding equipment with  mark.

JWA mark is compliant with JIS corresponded to ISO. Also additionally Japanese unique inspection is implemented. It makes safety and basic feature to be improved.

(JIS B 6801 Hand torch for welding, cutting and heating / JIS B 6803 Pressure regulator for welding and cutting and allied operation)

Test and Inspection Items


Hand gas cutting torch/Hand gas welding torch


- ◆ Adjustment of flame
- ◆ Flow rate/Backflow test
- ◆ Sustained-backfire test
- ◆ Stability in wind
- ◆ Leak test
- ◆ Cutting test (Cutting equipment only)
- ◆ Dimensional inspection
- ◆ Material inspection

Pressure regulators for gas cutting/welding equipment

- ◆ Pressure adjusting device
- ◆ Irregularity coefficient
- ◆ Coefficient of pressure increase upon closure
- ◆ Maximum discharge
- ◆ Pressure relief valve performance test (Oxygen pressure regulator only)
- ◆ Ignition test (Oxygen pressure regulator only)
- ◆ Safety Test
- ◆ Pressure retention test
- ◆ Material inspection
- ◆ Visual inspection
- ◆ Leak test
- ◆ Test for durability of markings
- ◆ Dimensional inspection

Products with  mark are supplied under liability of The Japan Welding Engineering Society.

Products with  mark passed the strict certification test.

Products with  mark are covered by PL insurance.^(*1)

(*1)Restricted to use in Japan.

List of certification-relative companies

CHIYODA SEIKI CO., LTD.

Hyogo-ken, Kobe-shi, Nagata-ku,
Higashi-shirike-cho 7-9-21
CEP: 653-0022 Japan
TEL: 078-681-8844 FAX: 078-681-8849

NISSAN TANAKA CO., LTD.

Saitama-ken, Iruma-gun, Miyoshi-machi,
Oaza-chikumazawa 11
CEP: 354-8585 Japan
TEL: 049-258-4412 FAX: 049-258-4858

NIPPON CUTTING & WELDING EQUIPMENT CO., LTD.

1/10 Moo5 Rojana Road, Karnharm. U-tai
Ayutthaya 13210, Thailand.
TEL: (63 35)330127 FAX: (66 35)330136

YAMATO SANGYO CO., LTD.

Osaka-fu, Osaka-shi, Ikuno-ku,
Tatsumikita 4-11-17
CEP: 544-0004 Japan
TEL: 06-6751-1151 FAX: 06-6752-0577

KOIKE SANJO KOGYO CO., LTD.

Tokyo-to, Sumida-ku, Taihei 3-4-8
CEP: 130-0012 Japan
TEL: 03-3624-3111 FAX: 03-3624-3124

SAKAGUCHI MFG CO., LTD.

Osaka-fu, Yao-shi, Minami-honmachi9-5-4
CEP: 581-0081 Japan
TEL: 072-9993-1212 FAX: 072-992-5200

HANSHIN CO., LTD.

Hyogo-ken, Amagasaki-shi,
Heizaemon-cho 18-25
CEP: 660-0087 Japan
TEL: 06-6419-2091 FAX: 06-6419-2090

GUNMA KOIKE CO., LTD.

Gunma-ken, Isesaki-shi, Naganuma-machi
222-1
CEP: 372-0855 Japan
TEL: 0270-32-4318 FAX: 0270-32-4137

Precautions for periodic inspection from manufacturer

- ① During periodic inspection, it may be necessary to replace some items.
- ② In addition to the periodic inspection fee, payment for replaced items may be required.
- ③ Periodic inspection requires time, so please check the period in advance.

◎Official website of the Gas Cutting and Welding Equipment Certifying Committee.

<http://www.jwes.or.jp/mt/etc/gap/>

◎Official website for the list of certified equipment brands.

<http://www.jwes.or.jp/mt/etc/gap/archives/2011/07/2341.html>

Our Request for Checking Your Gas Cutting/Welding Equipment

Serious accidents such as fire and physical injury have been caused in the gas cutting/welding operations by the use of **pressure regulators and blowpipes (gas cutting/welding torches)** with poor maintenance being not aware of the problem. It is very important to conduct daily and periodic inspection on those equipment in order to prevent such accidents.

Make sure to conduct the voluntary check to use safely the gas cutting/welding equipment.

**Explosion accident
Flashback accident
Gas leak accident**



Note 1: When welding, cutting and heating metal with fuel gas and oxygen, the operators need to have the gas-welding skill training completion certificate or the license of a chief for gas welding work.
(Article 61 of the Industrial Safety and Health Law ; and Article 20 of the Enforcement Ordinance)



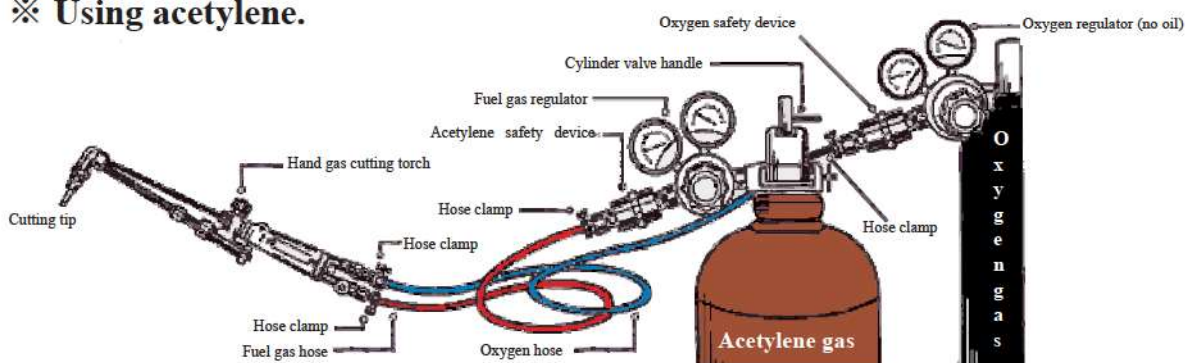
When troubles such as gas leakage are found in the equipment, do not use and request the manufacturer for repair it before use. Never disassemble and repair it yourself because that may be a cause of serious accident. Aging pressure regulator and blow pipes (cutting/welding torch), blow pipes with repeated flashback and gas hose with crack are to be replaced with new ones immediately.

Gas cutting/welding equipment to be checked:

- ★Oxygen regulator
- ★Fuel gas regulator
- ★Hand gas cutting torch
- ★Hand gas welding torch
- ★Others (hose, flashback arrestor and etc.)



※ **Using acetylene.**



Note 2: Install a flashback preventive device (ex.: flashback arrestor) in the equipment that uses acetylene gas for welding, heat or cutting.
(General High Pressure Gas Safety Regulations, Article 60, Paragraph 1, Item 13, and Illustrative Criteria 79, Industrial Safety and Health Research Institute Technical Guidelines (JNIOH-TR-48:2017))

Inspection for Pressure Regulator

☆For details of inspection method, please refer to the instruction manual of the related manufacturer or contact manufacturers directly.

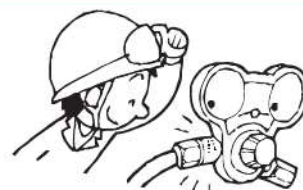
Inspection items

Conduct the periodic inspection for the following items.

Inspection items	Daily inspection	Yearly periodic inspection
Visual inspection	○	○
Gas leak test (flow out)	○	○
Gas leak test (external leak)	○	○
Operation pressure range		○
Pressure drop		○

Inspection or replacement within 7 years recommended by the manufacturer.

No problem on the appearance, and no gas leakage!



Daily inspection Make sure to check the equipment once a day before use.

1) Check the appearance.

- Any crack or corrosion in the body and cap of pressure regulator?
- Any damage or deformation in the inlet and outlet connection and pressure gauge?
- Any flaw, deformation or adhered dirt on the connecting part and screw of inlet connection and cylinder valve?
- Any deformation of the case of pressure gauge and is the indicator returned to zero point?

2) Check the gas leak.

① Supply gas with the pressure adjusting screw loosened and detect gas leak with detection liquid.

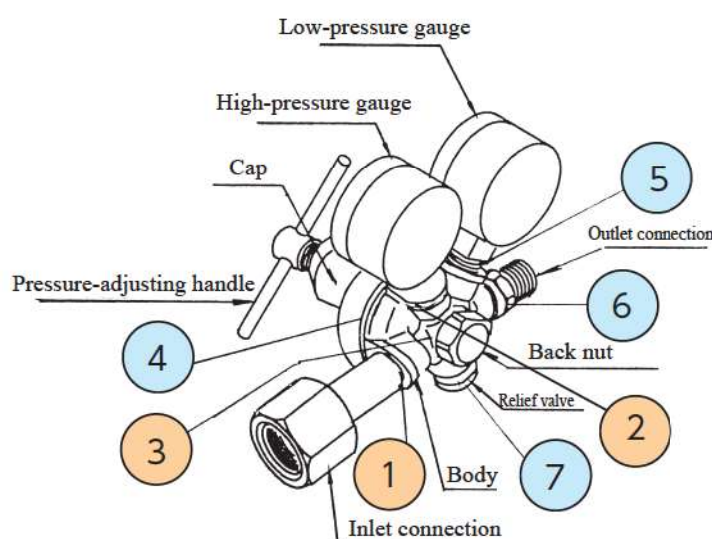
- Any gas leak from ① to ③ part?
- Any gas leak (flow out) from outlet ?

② Set the regulator at service pressure with outlet closed and detect gas leak with detection liquid.

(* Some components of the leak detection solution may deteriorate or damage the plastic. Check the components of the solution and how to use it.)

- Any gas leak from ④ to ⑦ part?

If you noticed any problem with above inspection, make sure to ask the manufacturer for repair.



- ① Screw-in part of the inlet connection
- ② Screw-in part of the high pressure gauge
- ③ Screw-in part of back nut
- ④ Screw-in part of body and cap
- ⑤ Screw-in part of low pressure gauge
- ⑥ Screw-in part of outlet connection
- ⑦ Relief valve

Depending on the model and structure of the pressure regulator, there may be no back cover or relief valve.



Yearly Periodic Inspection

Adding to the daily inspection of appearance and gas leakage, conduct the following yearly inspection by users or periodic inspection by manufacturers.

3) Check the service pressure range

- With outlet of gas regulator closed and gas supplied from inlet, is it possible to set normally the highest service pressure by pressure adjusting screw?
- Any gas leak from the outlet of relief valve?

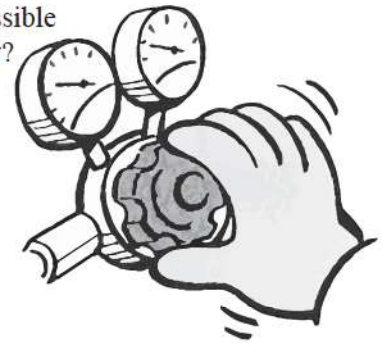
In case setting of gas pressure cannot be made normally or the relief valve is activated at lower pressure than the maximum service pressure, make sure to request the manufacturer for repair.

4) Confirm there is no pressure drop

- Any pressure drop in the reading of high pressure gauge when the gas flows in normal operation?

In case the pressure drop in the reading of high pressure gauge is observed, the filter of regulator inlet is possibly clogged.

In such a case, make sure to request the manufacturer for repair.



Operate the pressure adjusting screw to confirm the maximum service pressure can be obtained.

Periodic Inspection by Manufacturer

Perform the manufacturer's periodic inspection within 7 years from the date of manufacture.

In June 2017, according to the Technical Guideline of the Industrial Health and Safety Research Institute (JNIOH-TR-48:2017), if the product exceeds 7 years from the date of manufacture, the manufacturer must inspect the equipment or it must be replaced.

Refer to the manufacturer's instruction manual to verify the method and position of displaying the manufacturing date. If you are not sure of the displaying information, contact the manufacturer.

Distributor confirmation

Products which the security cannot be confirmed, have possibly been transferred or sold, or sold in online auctions. For products which sales origin is unknown, the inspection is uncertain and the product's safety cannot be confirmed. Be sure to check the distributor carefully when purchasing the product.

Risk when inspection is neglected:

When the inspection is neglected, there is high risk of such accidents as gas leak, flashback, explosion, etc. Especially for oxygen, there is risk of the following accident.

If the filter of regulator is clogged with dust and foreign materials and valve of oxygen cylinder is opened rapidly by mistake, the regulator may be ignited and burn by adiabatic compression heat of oxygen. Adiabatic compression heat is a heat generated when gas is compressed adiabatically.

Adiabatic compression heat is the heat generated when the gas is adiabatically compressed.

In the case of oxygen gas, when compressed rapidly from atmospheric pressure to 15MPa, the heat of compression reaches approximately 1000°C.

In addition to filter clogging, adiabatic compression heat can ignite and burn in the following cases.

- ① When oil or grease is adhered
- ② When a regulator for other gas service than oxygen is used.

Oxygen regulator ignited and burnt by adiabatic compression heat.



Inspection for Gas Welding/Cutting Equipment

☆For details of inspection method, please refer to the instruction manual of the related manufacturer or contact manufacturers directly.

Inspection items

Conduct the periodic inspection for the following items.

Inspection items	Daily inspection	Yearly periodic inspection
Visual inspection	○	○
Gas leak test (flow out)	○	○
Flame condition	○	○
Gas leak test (external leak)		○

Inspection or replacement within 5 years recommended by the manufacturer.

Daily inspection

Make sure to check the equipment once a day before use.

1) Check the appearance.

- Any crack or corrosion in the body, fitting base for hose and pipe ?
- Any damage or deformation in the valves and other parts?
- Any flaw or deformation in the contact face of nozzle and base for hose and screw?
- Any deformation or melting of nozzle?

2) Confirm no leak in the valves.

- Any leak from valve seat?

3) Check the condition of flame.

- Is it possible to adjust the flame smoothly?
- Is the stream of cutting oxygen normal?

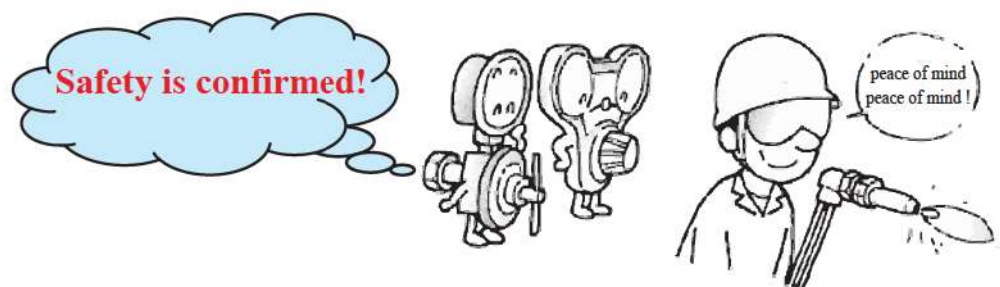
Voluntary Annual Inspection

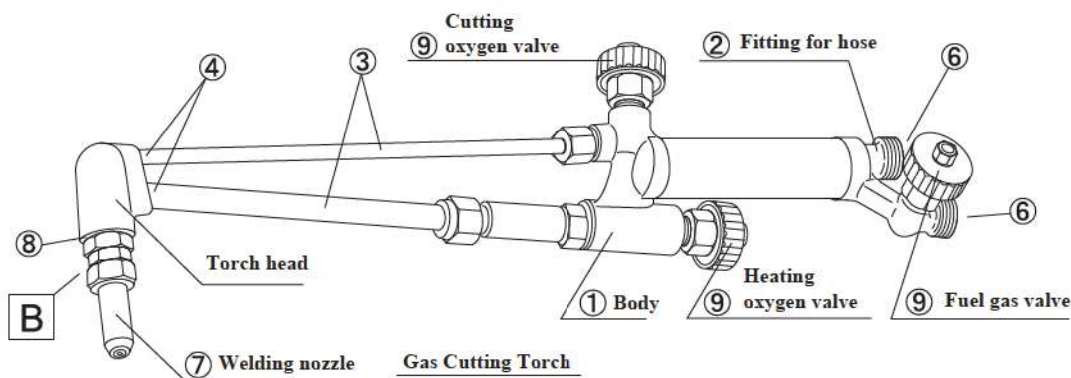
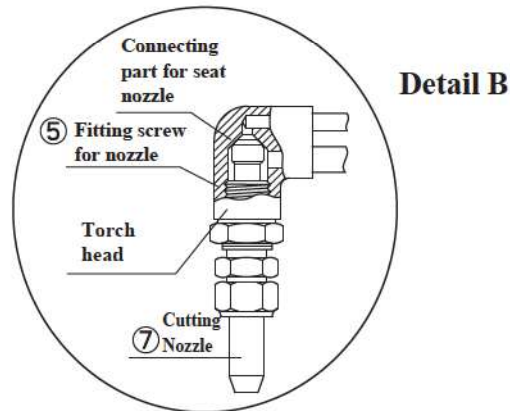
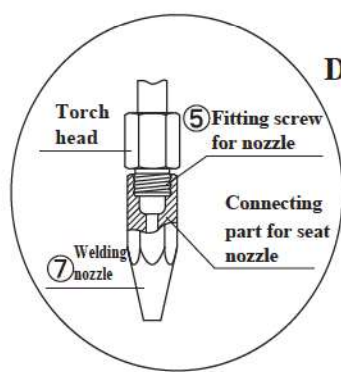
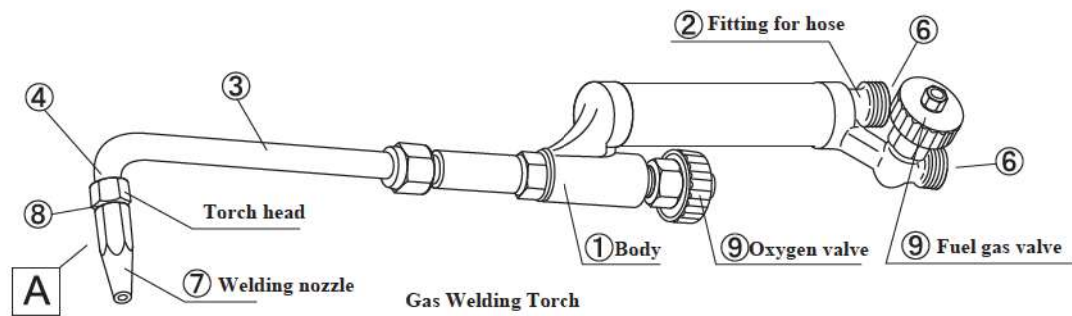
4) Confirm no external leak.

- Any leakage in the nozzle connection?
- Any external leak in the valves and connection of other parts?

If you noticed any problem with above inspection, make sure to ask the manufacturer for repair.

However, in case of problem with nozzle, replace it immediately with a new one.





- | | | |
|--------------------|----------------------------|-----------------------------------|
| ① Body | ④ Brazing parts | ⑦ Nozzle |
| ② Fitting for hose | ⑤ Fitting screw for nozzle | ⑧ Connecting part for seat nozzle |
| ③ Pipe | ⑥ Fitting for hose | ⑨ Valve |

Periodic Inspection by Manufacturer

Perform the manufacturer's periodic inspection within 5 years from the date of manufacture.

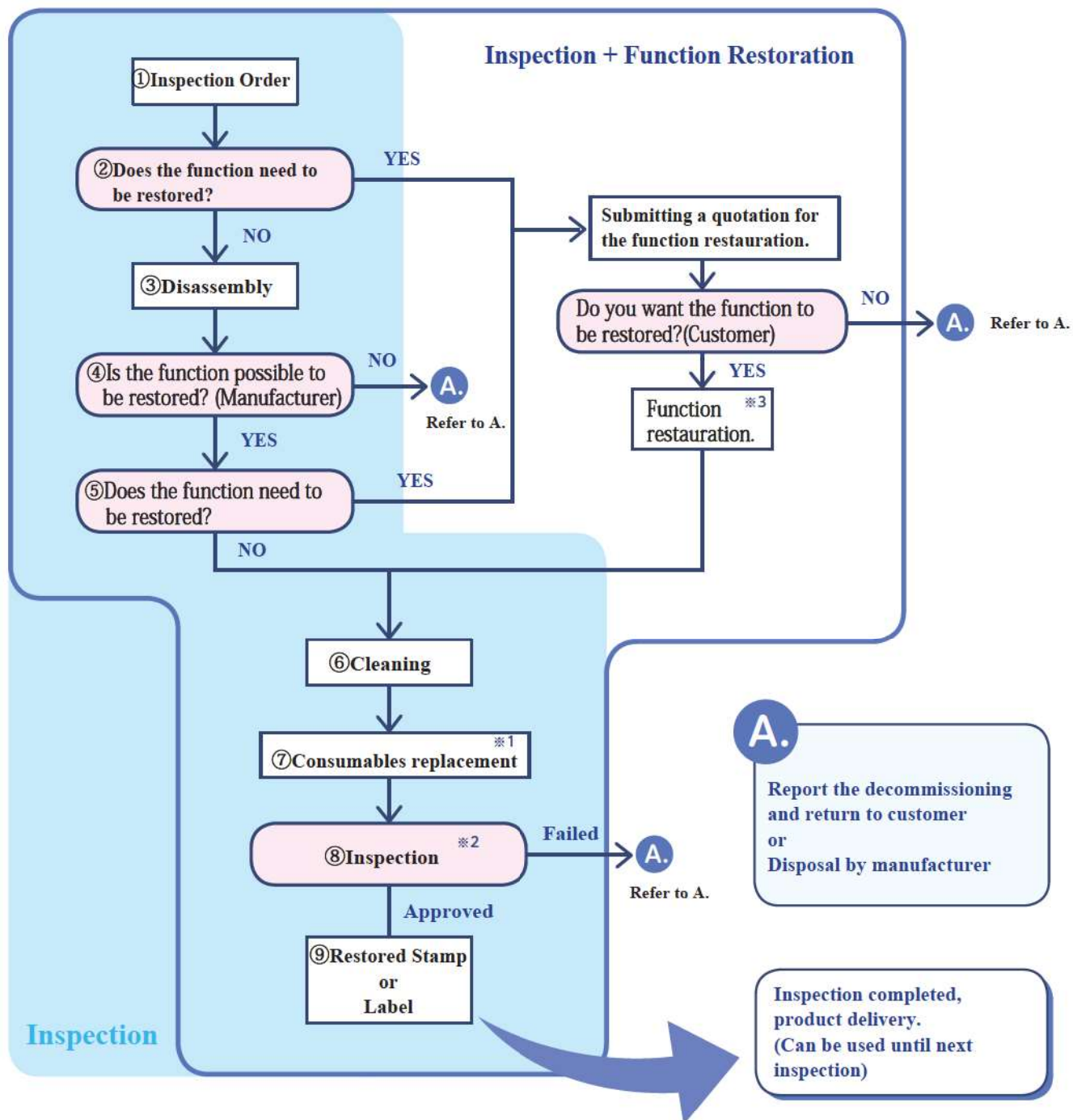
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Distributor confirmation

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Inspection before inspection order / Confirmation of new purchase.



Supplementary Material on Inspection / Repair Flow for Periodic Inspection by the manufacturer.

※ 1 Consumables

Pressure Regulator	Cutting/Welding torch
Valve body	Ruber part
Diaphragm	Resin part
Filter	
Relief valve	
Others	

※ 2 Certification research and research items (some items may not be included)

Perform periodic product inspection. However, at least, certification research and research items must be included.

Pressure Regulator	Cutting/Welding torch
Visual inspection	Visual inspection)
Leak test	Leak test
Relief valve operation test (S1 and S2 only)	Flame adjustment test

※ 3 Contents of the function restoration.

• Content of the function restoration are specific of each company. It will not be specified here.