



MODEL INFORMATION

GAS	CGA INLET NO.	A RANGE 2-15 PSI	D RANGE 5-125 PSIG	E RANGE 10-200 PSIG	CGA OUTLET
Oxygen	540		VTS 700D	VTS 700E	024
Argon, Helium Nitrogen	580		VTS 700D	VTS 700E	024
Hydrogen	350		VTS 702D	VTS 702E	025
Carbon Dioxide	320		VTS 703D	VTS 703E	024
Nitrous Oxide	326		VTS 703D	VTS 703E	024
Acetylene	510	VTS 710A			025
Propane, Butane	510		VTS 711D		025

NOTE: Regulators for Manifold Service are specified by adding the letter "M" to the model description.

EXAMPLE: VTS 700 ME (oxygen manifold regulator with "E" delivery range).

CAUTION

Welding apparatus improperly maintained or repaired can be dangerous. Some parts and accessories manufactured by others may fit VICTOR apparatus but not conform to VICTOR'S exacting standards. For your own protection, specify and use only VICTOR-made parts and accessories with your VICTOR apparatus.

Service or repair of VICTOR apparatus should be performed only by a qualified repair technician. Improper service or repair, or modification of the product could result in damage to the product or injury to the operator.



**CHART 1**  
**ADJUSTING SPRING & L.P. GAUGE INFORMATION**

DESCRIPTION	VTS 700A	VTS 710A, MA	VTS 700B	VTS 702B VTS 703B	VTS 711B, MB	VTS 700D, MD	VTS 700E, ME
	VTS 702A VTS 703A					VTS 702D, MD VTS 703D, MD VTS 711D, MD	
Spring Housing Cap L.P.	0720-0043	0720-0043	0720-0043	0720-0043	0720-0043	0720-0043	0720-0052
Spring Button L.P.	0706-0005	0706-0005	0706-0005	0706-0005	0706-0005	0706-0019	0706-0005
Adjusting Spring L.P. (Inner)	N/A	N/A	N/A	N/A	N/A	N/A	0761-0085
Adjusting Spring L.P.	0761-0004	0761-0004	0761-0010	0761-0010	0761-0010	0761-0006	0761-0086
Adjusting Spring H.P.	0761-0068	0761-0071	0761-0068	0761-0068	0761-0071	0761-0068	0761-0067
Spring Button H.P.	0706-0014	0706-0015	0706-0015	0706-0014	0706-0014	0706-0014	0706-0014
Adjusting Screw H.P.	0750-0055	0750-0055	0750-0055	0750-0055	1401-0034	1401-0034	0750-0055
Gauge L.P.	1424-0029	1424-0034	1424-0035	1424-0035	1424-0035	1424-0039	1424-0046

**CHART 2**  
**RELIEF VALVE INFORMATION**

DESCRIPTION	VTS 700A	VTS 700B	VTS 700D, MD	VTS 700E, ME
	VTS 703A	VTS 703B	VTS 703D, MD	VTS 703E, ME
Relief Valve	0600-0014	0600-0016	0600-0018	0600-0023
Body	0601-0004	0601-0004	0601-0006	0601-0006
Seat	0608-0006	0608-0009	0608-0009	0608-0009
Seat Retainer	0609-0003	0609-0003	0609-0006	0609-0006
Upper Seat	0608-0018	0608-0018	0608-0023	0608-0023
Disc	1406-0016	1406-0016	1406-0017	1406-0017
Spring	0610-0008	0610-0009	0610-0013	0610-0014
Cap	0614-0004	0614-0004	0614-0006	0614-0006
Vented Relief Valve	0600-0067	0600-0071	0600-0066	
Body	0601-0006	0601-0006	0601-0006	
Seat	0608-0009	0608-0009	0608-0006	
Seat Retainer	0609-0006	0609-0006	0609-0006	
Upper Seat	0608-0023	0608-0023	0608-0023	
Disc	1406-0017	1406-0017	1406-0017	
Spring	0610-0014	0610-0014	0610-0016	
Spring Button	0606-0005	0606-0005	0606-0005	
Cap	0614-0016	0614-0016	0614-0016	
Adjusting Screw	1401-0008	1401-0008	1401-0008	
Cap Nut	1403-0024	1403-0024	1403-0024	

**CHART 3A**  
**INLET NUT & SWIVEL AND SEAT ASSEMBLY INFORMATION**

GAS	CGA INLET NO.	SWIVEL PART NO.	NUT PART NO.	H.P. SEAT ASSEMBLY PART NO.	L.P. SEAT ASSEMBLY PART NO.	OUTLET CONNECTION
Oxygen	540	0967-0039	0967-0047	0740-0016	0740-0017	0950-0024
Argon/Helium/Nitrogen	580	0970-0015	0973-0003	0740-0016	0740-0017	0950-0024
Air (Industrial)	590	0970-0015	0974-0003	0740-0016	0740-0017	0950-0024
Air	346 (1340)	0972-0010	0972-0015	0740-0016	0740-0017	0950-0024
Hydrogen	350	0983-0005	0983-0003	0740-0135	0740-0140	0960-0017
Carbon Dioxide	320*	0985-0004	0985-0030	0740-0016	0740-0017	0950-0024
Nitrous Oxide	326 (1320)	0963-0010	0963-0015	0740-0016	0740-0017	0950-0024
Acetylene	510	0970-0015	0970-0003	0740-0103	0740-0102	0960-0017
Propane, Butane, MAPP*, Etc.	510	0970-0026	0970-0004	0740-0103	0740-0102	0960-0017

\*Inlet Washer P/N 1408-0065 required for use with CGA 320 Inlet Connection

**CHART 3B**  
**INLET NUT & SWIVEL AND SEAT ASSEMBLY INFORMATION (MANIFOLDS)**

GAS	CGA INLET NO.	OUTLET SWIVEL PART NO.	OUTLET NUT PART NO.	H.P. SEAT ASSEMBLY PART NO.	L.P. SEAT ASSEMBLY PART NO.	INLET CONNECTION
Oxygen	1"-11½ NPS	0996-0005	0996-0004	0740-0016	0740-0017	0996-0015
Hydrogen	1"-11½ NPS	0996-0032	0996-0004	0740-0135	0740-0140	0997-0008
Acetylene, L.P. Gas	1"-11½ NPS	0996-0005	0996-0004	0740-0103	0740-0102	0997-0008
Carbon Dioxide	1"-11½ NPS	0996-0005	0996-0004	0740-0016	0740-0017	0996-0015

# SERVICE INSTRUCTIONS

## DISASSEMBLY PROCEDURES

### Disassembling the Low Pressure Stage

**Recommended Tools:** Holding fixture RT-106, L.P. cap wrench RT-12,  $\frac{3}{8}$ " hex socket and socket wrench.

1. Place the holding fixture in a vise and place the regulator in the holding fixture with the Gauges face up.
2. Remove the L.P. Adjusting Screw from the L.P. Housing Cap.
3. Remove the L.P. Housing Cap from the Body.
4. Remove the Spring Button, L.P. Adjusting Spring(s), L.P. Diaphragm Assembly, and Diaphragm O-Ring from the Body.
5. Remove the Stem Extension from the L.P. Nozzle.
6. Remove the L.P. Nozzle and L.P. Nozzle Gasket from the Body.
7. Remove the L.P. Seat Assembly, Valve Spring, Gland and Friction Washer from the Body.
8. Discard used regulator O-Rings, L.P. Nozzle Gasket, Gland and Friction Washer.

#### CAUTION

Replace the regulator O-Rings, L.P. Nozzle Gasket, Gland and Friction Washer every time you reassemble a regulator.

### Disassembling the High Pressure Stage

**Recommended Tools:** Holding fixture RT-106, H.P. cap wrench RT-13, body wrench RT-121,  $\frac{3}{8}$ " and  $\frac{5}{32}$ " Allen hex wrench,  $\frac{7}{16}$ ",  $\frac{5}{8}$ ",  $\frac{1}{16}$ ",  $\frac{3}{4}$ " and 1" sockets, socket wrench and  $\frac{9}{16}$ " open end wrench.

9. Remove the regulator from the holding fixture, turn it over, and place it back in the holding fixture with the Gauges face down.

#### CAUTION

DO NOT damage the diaphragm seating surface on the Body.

10. Remove the Cap Nut from the H.P. Adjusting Screw.
11. Turn the H.P. Adjusting Screw counterclockwise until there is no pressure on the H.P. Adjusting Spring.
12. Remove the H.P. Housing Cap from the Body.
13. Remove the Spring Button, and H.P. Adjusting Spring from the Diaphragm Assembly.
14. Remove the Diaphragm Plate Nut from the Diaphragm Assembly.
15. Remove the Stem Lock Washer and Diaphragm Plate Nut Gasket from the Diaphragm Assembly.

16. Remove the H.P. Diaphragm Assembly and H.P. Diaphragm Slip Ring from the Body.
17. Remove the Nozzle Holder from the Body.
18. Remove the H.P. Nozzle, Nozzle Gasket, Seat Assembly, Valve Spring, Gland and Friction Washer from the Body.
19. Discard the Stem Lock Washer, Diaphragm Plate Nut Gasket, Slip Ring, Gland and Friction Washer.

#### NOTE

The Stem Lock Washer is no longer required for proper performance.

#### CAUTION

Replace the Slip Ring and Diaphragm Plate Nut Gasket every time you reassemble a regulator.

20. Remove the Guide Spring Holder from the Body.
21. Remove the Body from the holding fixture and install the body wrench on the L.P. side of the Body. Clamp the body wrench handle in a vise.
22. Remove the Gauges from the Body.

#### WARNING

DO NOT attempt to repair the Gauges.

23. Remove the Inlet Connection from the Body. DO NOT damage the Inlet Connection seating surfaces. CGA 540:  
Remove the Inlet Swivel from the Body. Remove the Retaining Ring and Inlet Nut from the Inlet Swivel.
24. Remove the Inlet Filter from the Inlet Swivel. Discard the Inlet Filter.
25. Remove the Outlet Connection from the Body. DO NOT damage the Outlet Connection seating surfaces.
26. Remove the Relief Valve and Screen from the Body.

### Disassembling the Diaphragm Assemblies

**Recommended Tools:**  $\frac{1}{2}$ " and  $\frac{3}{8}$ " sockets, socket wrench and adjustable wrench.

27. Disassemble the Diaphragm Assemblies as shown in Details B and C.

### Disassembling the Relief Valve Assembly

**Recommended Tools:**  $\frac{1}{16}$ ",  $\frac{9}{16}$ " box end wrenches.

28. Disassemble the Relief Valve Assembly as shown in Detail D.

### Disassembling the Vented Relief Valve

**Recommended Tools:**  $\frac{3}{4}$ " and  $\frac{1}{2}$ " box end wrenches, and  $\frac{13}{16}$ " open end wrench.

29. Disassemble the Vented Relief Valve as shown in Detail E.

### ASSEMBLY PROCEDURES

#### Assembling the Vented Relief Valve

**Recommended Tools:** Same as Disassembly.

1. Assemble the Vented Relief Valve as shown in Detail E. Use no sealants or lubricants.

#### CAUTION

To ensure proper Vented Relief Valve performance, perform the following test procedures BEFORE PUTTING THE VENTED RELIEF VALVE INTO SERVICE.

2. Setting the Vented Relief Valve vent pressure:
  - a. Attach the Vented Relief Valve to test manifold. The test manifold must be capable of delivering oil-free air or dry nitrogen at the appropriate pressure listed below:
    - B Range — 325 PSIG
    - D Range — 425 PSIG
    - E Range — 550 PSIG
  - b. Slowly pressurize the Vented Relief Valve, starting at a low pressure and building up to the recommended vent pressure listed below. If the Vented Relief Valve fails to relieve within the recommended blow-off pressure range, reset the Adjusting Screw as necessary and repeat this step. Recommended blow-off pressures are:
    - B Range — 325 +/- 50 PSI
    - D Range — 425 +/- 50 PSI
    - E Range — 500 +/- 50 PSI
  - c. When the correct vent pressure is achieved, install and tighten the Cap Nut.

#### Assembling the Relief Valve

**Recommended Tools:** Same as Disassembly.

3. Assemble the Relief Valve as shown in Detail D. Use no sealants or lubricants.

#### CAUTION

To ensure proper Relief Valve performance, perform the following test procedures BEFORE PUTTING THE RELIEF VALVE INTO SERVICE.

4. Setting the Relief Valve vent pressure:
  - a. Attach the Relief Valve to test manifold. The test manifold must be capable of delivering oil-free

air or dry nitrogen at the appropriate pressure listed below:

B Range — 325 PSIG

D Range — 425 PSIG

E Range — 550 PSIG

- b. Slowly pressurize the Relief Valve, starting at a low pressure and building up to the recommended vent pressure listed below. If the Relief Valve fails to relieve within the recommended blow-off pressure range, drain the Relief Valve of all pressure, disassemble the Relief Valve and correct the problem. Retest after reassembling. Recommended blow-off pressures are:

B Range — 325 +/- 50 PSI

D Range — 425 +/- 50 PSI

E Range — 500 +/- 50 PSI

#### Assembling the Diaphragm Assemblies

**Recommended Tools:** Same as Disassembly.

5. Assemble the Diaphragm Assemblies as shown in Details B and C. Use no sealants or lubricants.

#### Assembling the Regulator

**Recommended Tools:** Body Wrench RT-121,  $\frac{11}{16}$ ",  $\frac{3}{4}$ " and 1" sockets, torque wrench,  $\frac{9}{16}$ " open end wrench, LOCTITE #222 threadlock, and TEFLON tape.

6. Clamp the body wrench in a vise. Install the Body in the body wrench.
7. Apply a small amount of LOCTITE #222 threadlock to the second and third male threads of the Outlet Connection. Install the Outlet Connection in the Body and tighten to a torque of 14-18 ft. - lbs.

#### NOTE

**DO NOT install the Relief Valve at this time.**

8. Install the new Filter in the Inlet Swivel. Place the Inlet Nut on the Inlet Swivel.
9. Wrap two or three layers of TEFLON tape around the male threads of the Inlet Swivel. Install the Inlet Swivel in the Body and tighten to a torque of 20-25 ft. - lbs.  
CGA 450 Only:  
Place the Retaining Ring around the Inlet Swivel.
10. Apply a small amount of LOCTITE #222 threadlock to the second and third male threads of the L.P. Gauge. Wrap two or three layers of TEFLON tape around the male threads of the H.P. Gauge. Install the Gauges in the Body and tighten to a torque of 10 ft. - lbs. minimum.
11. To remove any contaminants that may otherwise cause the regulator to malfunction once it is assembled, connect the regulator body to a source of oil-free air and slowly open and close manifold

valve two or three times. Then blow out the inside of the regulator body with pressurized oil-free air.

**CAUTION**

**Always wear eye protection when blowing out the regulator body.**

**Assembling the High Pressure Stage**

**Recommended Tools:** Same as Disassembling the High Pressure Stage with the following addition: a torque wrench.

12. Remove the regulator from the body wrench. Place the holding fixture in a vise and place the Body in the holding fixture, Gauges face down.
13. Install the Guide Spring Holder in the Body.
14. Install the two (2) new Friction Washers, new Gland, Spring, new H.P. Seat Assembly, new H.P. Nozzle Gasket and Nozzle in the Body.
15. Install the H.P. Nozzle Holder in the Body and tighten to a torque of 16-20 ft. - lbs.
16. Place the new Diaphragm Slip Ring and H.P. Diaphragm Assembly on the Body.

**CAUTION**

**DO NOT reinstall used Slip Rings.**

17. Install the Diaphragm Nut Gasket and Diaphragm Plate Nut on the Diaphragm Assembly and tighten to a torque of 15-20 ft. - lbs.

**NOTE**

**DO NOT INSTALL A STEM LOCKWASHER. THIS PART IS NO LONGER REQUIRED FOR PROPER REGULATOR OPERATION.**

18. Place the H.P. Adjusting Spring on the H.P. Diaphragm Assembly.
19. Place the Spring Button (dimpled side down) on the Adjusting Spring.
20. Carefully place the H.P. Housing Cap over the H.P. Adjusting Spring and screw it on the Body. Tighten the H.P. Housing Cap to a torque of 40-50 ft. - lbs.
21. To remove any contaminants that may otherwise cause the regulator to malfunction once it is assembled, connect the regulator body to a source of oil-free air and slowly open and close manifold valve two or three times. Then blow out the inside of the regulator body with pressurized oil-free air.

**CAUTION**

**Always wear eye protection when blowing out the regulator body.**

22. Install the H.P. Adjusting Screw in the Housing Cap.

**Assembling the Low Pressure Stage**

**Recommended Tools:** Same as Disassembling the Low Pressure Stage with the following additions: Torque wrench, and LIQUID O-RING #151L.

23. Remove the regulator from the holding fixture, turn it over, and place it back in the holding fixture with the Gauges face up.
24. Install the two (2) new Friction Washers, new Gland, Spring, and new L.P. Seat Assembly in the Body.
25. Install the new L.P. Nozzle Gasket and L.P. Nozzle in the Body and tighten to a torque of 16-20 ft. - lbs.
26. Place the Stem Extension in the Nozzle.
27. Place the new Diaphragm O-Ring and L.P. Diaphragm Assembly on the Body.

**CAUTION**

**DO NOT reinstall used regulator O-Rings. DO NOT lubricate any new regulator O-Rings.**

28. Place the L.P. Adjusting Spring on the L.P. Diaphragm Assembly.
29. Place the L.P. Spring Button (dimpled side down) on the L.P. Adjusting Spring.
30. Carefully place the L.P. Housing Cap over the L.P. Adjusting Spring and screw it on the Body. Tighten the L.P. Housing Cap to a torque of 45-50 ft. - lbs.
31. Apply a small amount of LIQUID O-RING #151L to the end and first few threads of the L.P. Adjusting Screw. Install the L.P. Adjusting Screw in the L.P. Housing Cap.

**WARNING**

**FOR YOUR SAFETY AND THE SAFETY OF THE OPERATOR, ALWAYS PERFORM THE TEST PROCEDURES DESCRIBED IN SECTION III AFTER REASSEMBLING THE REGULATOR.**

**If the Regulator does not perform properly during testing, refer to the TROUBLESHOOTING CHART in the Victor "APPARATUS SERVICE AND TESTING PROCEDURES" manual for SINGLE AND TWO STAGE REGULATORS. (Form No. 56-886.)**

## TEST PROCEDURES

**Recommended Tools:** Test gun (quick opening on-off valve) with #52 (.0635) restricting orifice, 2000 PSIG source of oil-free air or dry nitrogen, 400 PSI test gauge, and LOCTITE #222.

### WARNING

**Test with OIL-FREE AIR or DRY NITROGEN ONLY. Always wear eye protection when testing a regulator. Never stand directly in front of or behind a regulator when opening the cylinder valve or manifold. ALWAYS STAND SO THE CYLINDER VALVE OR MANIFOLD IS BETWEEN YOU AND THE REGULATOR.**

1. Slowly open and close the manifold valve two or three times to remove contaminants that may enter the regulator. Leave the manifold valve closed.
2. Attach the regulator to the manifold connection or test adaptor. Make sure the regulator Adjusting Screws are backed out until no pressure is on the Adjusting Springs.
3. Install the 400 PSI test gauge in the Relief Valve port.
4. Attach the test gun (with #52 orifice) to the regulator outlet.
5. **Presetting the High Pressure Stage**
  - a. Slowly open the manifold valve and test gun. Manifold working pressure (2000 PSIG) will appear on the H.P. Gauge.

### NOTE

**A pressure reading may appear on the 400 PSI test gauge at this time. This is a normal condition. If the pressure on this gauge continues to rise, turn off the manifold as there is a leak in the H.P. stage of the regulator.**

- b. Turn the regulator H.P. Adjusting Screw clockwise two or three turns to pressurize the regulator slightly.
- c. If the L.P. Gauge begins to indicate a rise in pressure **turn the test manifold off, disassemble the regulator and correct the problem.**
- d. Open the test gun and turn the H.P. Adjusting Screw clockwise until the test gauge reaches the appropriate pressure listed below:
  - A Range — 115 PSIG
  - B Range — 140 PSIG
  - D Range — 225 PSIG
  - E Range — 350 PSIG

- e. Observe the 400 PSI test gauge for five (5) minutes. During the first two (2) minutes, slow shut-off (delivery rise due to the seat not closing properly) should not exceed 2 PSIG. During the next three (3) minutes, no creep (0 PSIG) is allowed. Creep is indicated by an increase in the L.P. Gauge reading.
- f. When the correct pressure is achieved install the Cap Nut on the H.P. Adjusting Screw.
- g. Close the test manifold valve.
- h. Release the pressure from the regulator by turning the L.P. Adjusting Screw clockwise several turns and opening the test gun.
- i. Remove the test gauge from the Body.
- j. Apply a small amount of LOCTITE #222 thread-lock to the second and third male threads of the Relief Valve. Install the Relief Valve in the Body and tighten to a torque of 14-18 ft. - lbs.

### 6. Creep Test/Slow Shut-Off Test

- a. Open the test manifold.
- b. Close the test gun.
- c. Adjust the regulator to deliver the appropriate pressure listed below:
  - A Range — 5 PSIG
  - B Range — 10 PSIG
  - D Range — 20 PSIG
  - E Range — 50 PSIG
- d. Observe the L.P. pressure gauge for five (5) minutes. During the first two (2) minutes, slow shut-off (delivery rise due to the seat not closing properly) should not exceed 2 PSIG. During the next three (3) minutes, no creep (0 PSIG) is allowed. Creep is indicated by an increase in the L.P. Gauge reading.

### 7. Drop Test

- With the test gun closed, adjust the regulator to deliver the appropriate pressure listed in step 6. Open the test gun and note the new L.P. Gauge reading. Drop (difference in delivery from no-flow to flow) should not exceed the appropriate pressure listed below:
- A Range — 3 PSIG
  - B Range — 4 PSIG
  - D Range — 5 PSIG
  - E Range — 6 PSIG

### 8. Leak Test

- With the test gun closed, adjust the regulator to deliver the maximum delivery pressure.
- a. Close the manifold valve.
  - b. Turn the L.P. Adjusting Screw counterclockwise one turn. Observe both Gauges for five (5) minutes. If the H.P. Gauge reading decreases, a high pressure leak exists. If the L.P. Gauge reading decreases, a low pressure leak exists. In either case, disassemble the regulator, replace any suspect or damaged parts, and reassemble

- and retest the regulator.
9. Release the pressure from the regulator by opening the test gun. Turn the L.P. Adjusting Screw counterclockwise until no pressure is applied to

- the L.P. Adjusting Spring.
10. Remove the test gun from the regulator.
11. Remove the regulator from the manifold connection (or test adaptor).

## VICTOR REPAIR TOOLS

Model No.	Holding Fixture	Body Tap	Outlet Conn. Die	Outlet Conn. Reamer	Cap Bushing Tap	L.P. Cap Wrench	Body Wrench	H.P. Cap Wrench	Nozzle Holder
VTS 700	RT-106 1420-0164	3/8"-18 NPT 1422-0049 1/2"-14 NPT 1422-0070	7/8"-14 RH 1422-0130	RT-126 1420-0194	5/8"-18 NPT 1422-0076	RT-12 1400-0023	RT-121 1420-0212	RT-13 1420-0025	RT-17 1420-0028
VTS 710	"	"	7/8"-14 LH 1422-0131	RT-143 1420-0214	"				

**U.S. Customer Care: 800-426-1888 / FAX 800-535-0557 • International Customer Care: 905-827-9777 / FAX 905-827-9797**  
**U.S. Automation Customer Care: 866-279-2628 / FAX 316-941-4491 • [www.victorequip.com](http://www.victorequip.com)**



**WORLD HEADQUARTERS: 16052 Swingley Ridge Road, Suite 300 • St. Louis, Missouri 63017 U.S.A.**

**Home of the Brands You Trust™**

### THE AMERICAS

Denton, TX USA  
U.S. Customer Care  
Ph: (1) 800-426-1888  
Fax: (1) 800-535-0557

Miami, FL USA  
Sales Office, Latin America  
Ph: (1) 954-727-8371  
Fax: (1) 954-727-8376

Oakville, Ontario, Canada  
International Customer Care  
Ph: (1) 905-827-9777  
Fax: (1) 905-827-9797

Rio de Janeiro, Brazil  
Customer Care  
Ph: (55) 21-2485-8998  
Fax: (55) 21-2485-8866

West Lebanon, NH USA  
Customer Care, Plasma  
Ph: (1) 800-752-7621  
Fax: (1) 800-221-4401

### EUROPE

Chorley, United Kingdom  
Customer Care  
Ph: (44) 1257-261755  
Fax: (44) 1257-224800

Milan, Italy  
Sales Office  
Ph: (39) 02-98-80320  
Fax: (39) 02-98-281773

### ASIA/PACIFIC

Cikarang, Indonesia  
Customer Care  
Ph: 62 21+ 8983-0011 / 0012  
Fax: 62 21+ 893-6067

Osaka, Japan  
Sales Office  
Ph: 816-4809-8411  
Fax: 816-4809-8412

Melbourne, Australia  
Customer Care:  
Ph: 1300-654-674  
Fax: 613+ 9474-7391

International:  
Ph: 613+ 9474-7508  
Fax: 613+ 9474-7488

Rawang, Malaysia  
Customer Care  
Ph: 603+ 6092-2988  
Fax: 603+ 6092-1085

Shanghai, China  
Sales Office  
Ph: 86 21+ 6260-1273  
Fax: 86 21+ 3226-0955

Singapore  
Sales Office  
Ph: 65+ 6832-8066  
Fax: 65+ 6763-5812