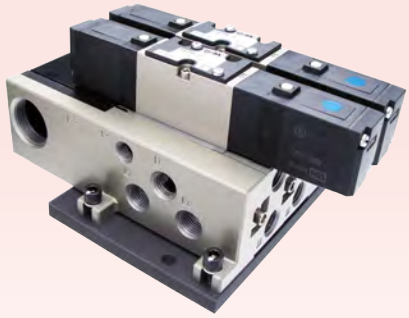
Air Valve Unit

Model **MV30**



Electric Control Air Valve Unit
Most Suitable for Controlling Air Cylinder of Auto-Slide Clamps

Air directional control valve actuates by electric control. Most suitable for controlling air cylinder attached to auto-slide clamp which slides in the T-slot automatically.

Model No. Indication

MV30 2 3 - SS - 5 - N

1 2 3 4 5

1 Size

※ Please contact us when using a large number of clamps.

1 : For Small / Medium Clamp
2 : For Large Clamp

2 Design No.

3 : Revision Number

3 Circuit Symbol

※ Please contact us when using more than 4 circuits.

N : GN Clamp Release Circuit
(Solenoid Valve : 2 Position Double)

S : Slider Circuit
(Solenoid Valve : 3 Position Exhaust Center)

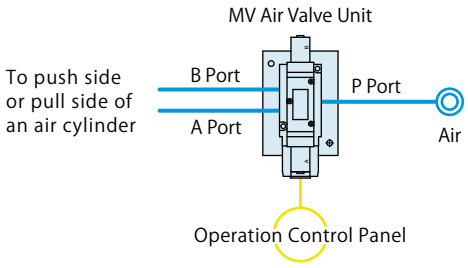
T : Slider Circuit
(Solenoid Valve : 2 Position Double)

● Circuit Symbol Example

Symbol	Circuit Type	Application Example
S	1 Slider Circuit	Upper or Lower Die Only
SS	2 Slider Circuits	Upper + Lower Die, or Cross Circuit
SSS	3 Slider Circuits	Upper Cross Circuit + Lower Die Circuit

● Application Example

The drawing shows when controlling push side and pull side of air cylinders with MV air valve unit.



4 Valve Control Voltage

1 : AC 100 V
2 : AC 200 V
3 : AC 110 V
4 : AC 220 V
5 : DC 24 V

5 Option

Blank : Standard
C : Negative Common
N : NPT Thread ※1
R : With Silencer
S : Solenoid Valve with Light/Surge Voltage Suppressor

Note:
※1. When selecting 5 Option **N**:NPT thread, each dimension of specifications or other documents is described in inches.

KOSMEK Harmony in Innovation

Specifications

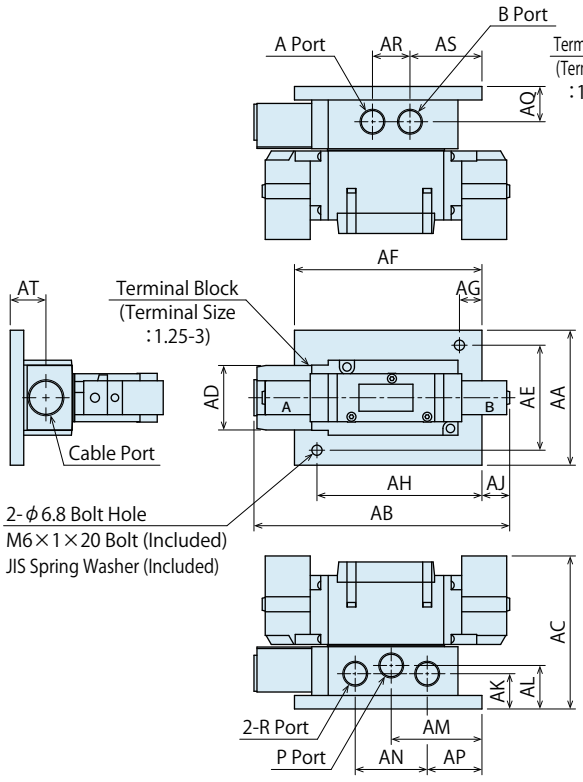
Model No.		MV3013	MV3023
Type		Metal Seal / 5 Port • Pilot Operated	
Position / No. of Solenoid	3 N, T	2 Position / Double	
	3 S	3 Position / Exhaust Center	
Effective Sectional Area	mm²	15	36
Usable Fluid		Dry Air ※2	
Maximum Operating Pressure	MPa	1.0	
Withstanding Pressure	MPa	1.5	
Usable Fluid Temperature	℃	−10 ～ +60	
Oil Supply		Not Required	
Protective Structure		Dust Proof	
Solenoid Model (SMC model)	3 N, T	VFS2200	VFS3200
	3 S	VFS2400	VFS3400

Note :

※2. Please supply clean air that is filtered.

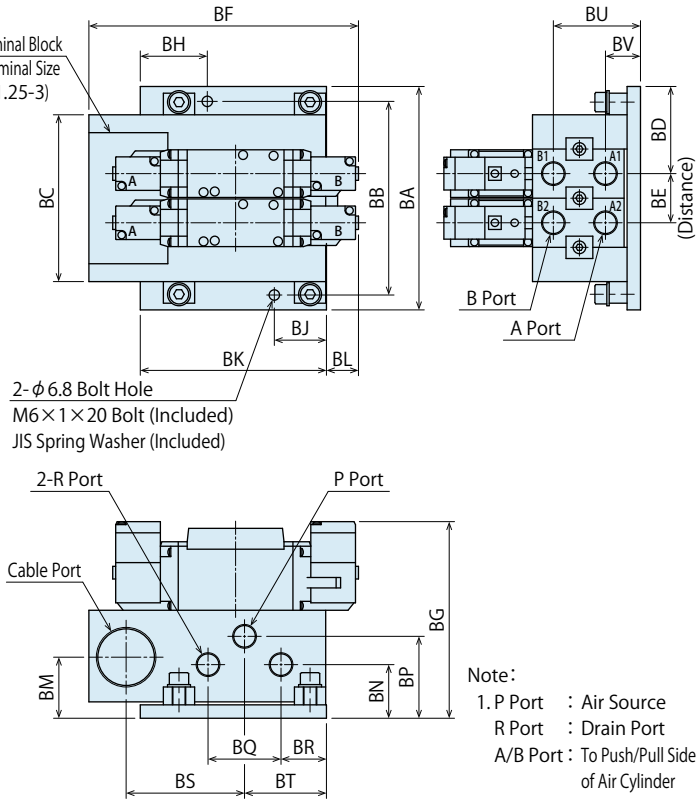
External Dimensions

1 Circuit



2 or 3 Circuits

※ This drawing shows when using 2 circuits.



Note:
1. P Port : Air Source
R Port : Drain Port
A/B Port : To Push/Pull Side of Air Cylinder

(mm)

Model No.	MV3013	MV3023
Control Circuit	1 Circuit	1 Circuit
AA	75	90
AB	166.5	170.5
AC	74	102
AD	43	43
AE	55	70
AF	100	125
AG	10	15
AH	90	110
AJ	36	18.5
AK	31	23.5
AL	20	29
AM	42	60.5
AN	28	48
AP	28	36.5
AQ	20.5	23.5
AR	20	25
AS	32	48
AT	21.5	23.8
P Port	Rc 1/4	Rc 3/8
R Port	Rc 1/8	Rc 3/8
A Port	Rc 1/4	Rc 3/8
B Port	Rc 1/4	Rc 3/8
Cable Port	G 1/2	G 1/2

(mm)

Model No.	MV3013		MV3023	
Control Circuit	2 Circuits	3 Circuits	2 Circuits	3 Circuits
BA	120	150	150	185
BB	105	135	130	165
BC	88	116	112	145
BD	46	47	58.5	59.5
BE	28		33	
BF	187.5		181	
BG	90.5		132	
BH	40		45	
BJ	30		35	
BK	100		125	
BL	34.5		21.5	
BM	36		41	
BN	25.5		36	
BP	39.5		55	
BQ	29		49	
BR	26.5		30.5	
BS	87.5		79.5	
BT	41		55	
BU	46.5		58.5	
BV	20.5		23.5	
P Port	Rc 1/4		Rc 1/2	
R Port	Rc 1/4		Rc 1/2	
A Port	Rc 1/4		Rc 3/8	
B Port	Rc 1/4		Rc 3/8	
Cable Port	G 3/4		G1 1/4	

Cautions

Installation Notes (Cautions for Hydraulic Series)

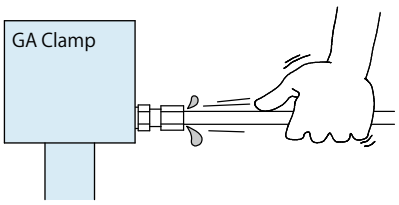
1) Check the fluid to use
- Please use the appropriate fluid by referring to the Hydraulic Fluid List.
- If hydraulic oil with viscosity grade higher than ISO-VG-32 is used, action time would be longer.
- If using it at low temperature, action time will be longer because the viscosity of hydraulic oil becomes higher.

2) Procedure before Piping
- The pipeline, piping connector and fixture circuits should be cleaned by thorough flushing.
- The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
- Our products except some valves are not equipped with protective function to prevent dust and cutting chips going into the hydraulic system and pipeline.

3) Applying Sealing Tape
- Wrap with tape 1 to 2 times following the screwing direction.
- Pieces of the sealing tape can lead to air leaks and malfunction.
- In order to prevent a foreign substance from going into the product during piping, it should be carefully cleaned.

4) Air Bleeding in the Hydraulic Circuit
- If the hydraulic circuit has excessive air, the action time may become very long.
  After installing the hydraulic circuit, or if the pump run out of oil, be sure to bleed air by the following step.

① Reduce hydraulic supply pressure to less than 2MPa.
② Please loosen the cap nut of pipe fitting that is closest to clamps・RA die lifters by one full turn.
③ Wiggle the pipeline to loosen the outlet of pipeline fitting. The hydraulic fluid mixed with air comes out.



④ Tighten the cap nut after bleeding.
⑤ It is more effective to bleed air at the highest point inside the circuit or at the end of the circuit.

5) Checking Looseness and Retightening
- At the beginning of the machine installation, the bolt/nut may be tightened lightly.
  Check torque and re-tighten as required.

Hydraulic Fluid List

ISO Viscosity Grade ISO-VG-32

Maker	Anti-Wear Hydraulic Oil	Multi-Purpose Hydraulic Oil
Showa Shell Sekiyu	Tellus S2 M 32	Morlina S2 B 32
Idemitsu Kosan	Daphne Hydraulic Fluid 32	Daphne Super Multi Oil 32
JX Nippon Oil & Energy	Super Hyrando 32	Super Mulpus DX 32
Cosmo Oil	Cosmo Hydro AW32	Cosmo New Mighty Super 32
ExxonMobil	Mobil DTE 24	Mobil DTE 24 Light
Matsumura Oil	Hydol AW-32	
Castrol	Hyspin AWS 32	

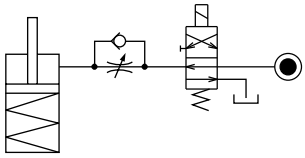
Note： As it may be difficult to purchase the products as shown in the table from overseas, please contact the respective manufacturer.

Notes on Hydraulic Cylinder Speed Control Unit

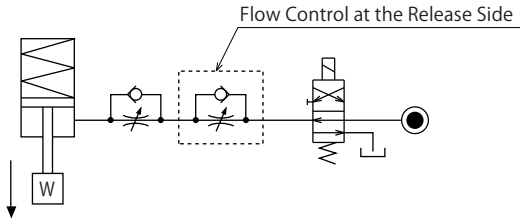
Please pay attention to the cautions below. Design the hydraulic circuit for controlling the action speed of hydraulic cylinder. Improper circuit design may lead to malfunctions and damages. Please review the circuit design in advance.

Flow Control Circuit for Single Acting Cylinder

For spring return single acting cylinders, restricting flow during release can extremely slow down or disrupt release action. The preferred method is to control the flow during the lock action using a valve that has free-flow in the release direction. It is also preferred to provide a flow control valve at each actuator.



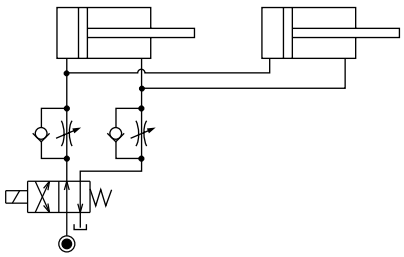
Accelerated clamping speed by excessive hydraulic flow to the cylinder may sustain damage. In this case add flow control to regulate flow.



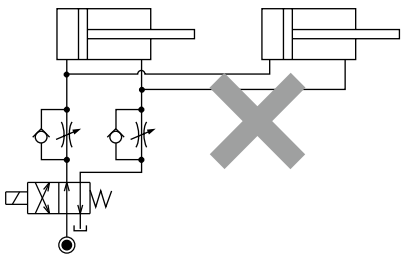
Flow Control Circuit for Double Acting Cylinder

Flow control circuit for double acting cylinder should have meter-out circuits for both the lock and release sides. Meter-in control can have adverse effect by presence of air in the system.

【Meter-out Circuit】

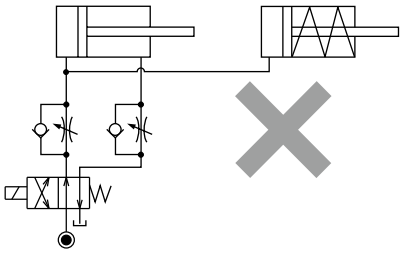


【Meter-in Circuit】



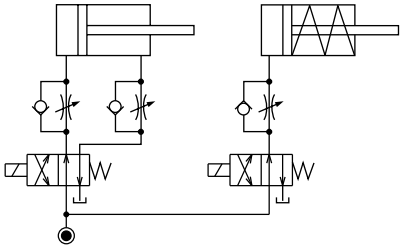
In the case of meter-out circuit, the hydraulic circuit should be designed with the following points.

① Single acting components should not be used in the same flow control circuit as the double acting components. The release action of the single acting cylinders may become erratic or very slow.

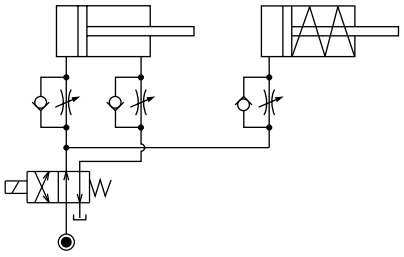


Refer to the following circuit when both the single acting cylinder and double acting cylinder are used together.

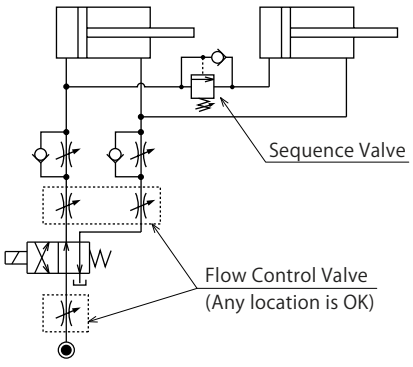
○ Separate the control circuit.



○ Reduce the influence of double acting cylinder control unit. However, due to the back pressure in tank line, single action cylinder is activated after double action cylinder works.



② In the case of meter-out circuit, the inner circuit pressure may increase during the cylinder action because of the fluid supply. The increase of the inner circuit pressure can be prevented by reducing the supplied fluid beforehand via the flow control valve. Especially when using sequence valve or pressure switches for clamping detection. If the back pressure is more than the set pressure then the system will not work as it is designed to.



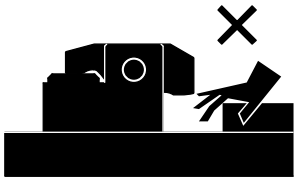
Cautions

Notes on Handling

1) It should be handled by qualified personnel.
- The hydraulic machine / air compressor should be handled and maintained by qualified personnel.

2) Do not handle or remove the machine unless the safety protocols are ensured.
① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
② Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
③ After stopping the machine, do not remove until the temperature cools down.
④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.

3) Do not touch clamps (cylinders) while they are working. Otherwise, your hands may be injured.

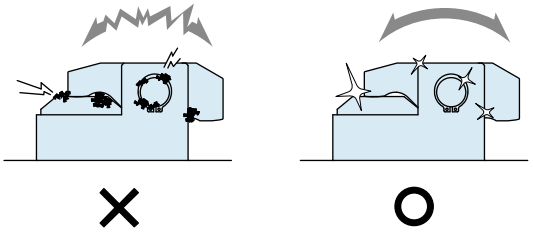


4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance・Inspection

1) Removal of the Machine and Shut-off of Pressure Source
- Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
- Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Regularly clean the area around the equipment.
- If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning , fluid leakage and air leaks.



3) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.

4) Regularly tighten bolts and pipe line, mounting bolts, nuts, circlips and cylinders to ensure proper use.

5) Make sure the hydraulic fluid has not deteriorated.

6) Make sure there is smooth action and no abnormal noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.

7) The products should be stored in the cool and dark place without direct sunshine or moisture.

8) Please contact us for overhaul and repair.

Warranty

1) Warranty Period

- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.

2) Warranty Scope

- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
  Defects or failures caused by the following are not covered.

① If the stipulated maintenance and inspection are not carried out.
② If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.
③ If it is used or handled in inappropriate way by the operator.
(Including damage caused by the misconduct of the third party.)
④ If the defect is caused by reasons other than our responsibility.
⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
⑥ Other caused by natural disasters or calamities not attributable to our company.
⑦ Parts or replacement expenses due to parts consumption and deterioration.
(Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.

Sales Offices

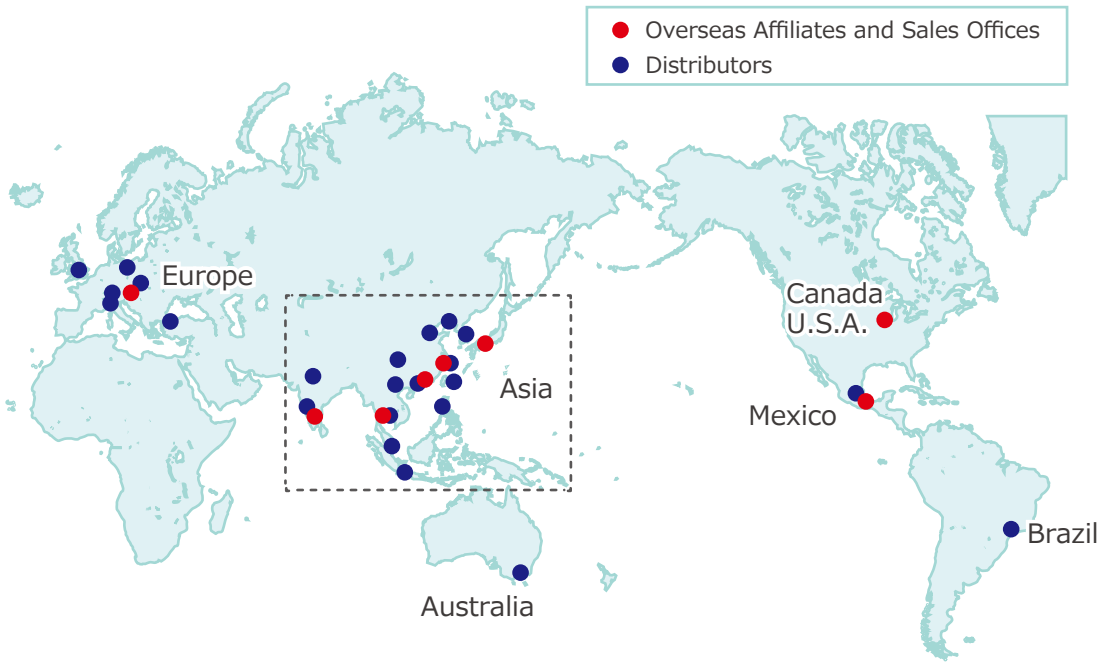
Sales Offices across the World

Japan Overseas Sales	**TEL. +81-78-991-5162**	FAX. +81-78-991-8787 KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241 〒651-2241　兵庫県神戸市西区室谷2丁目1番5号
USA KOSMEK（USA）LTD.	**TEL. +1-630-620-7650**	FAX. +1-630-620-9015 650 Springer Drive, Lombard, IL 60148 USA
Mexico KOSMEK USA Mexico Office	**TEL. +52-442-161-2347**	Blvd Jurica la Campana 1040, B Colonia Punta Juriquilla Queretaro, QRO 76230 Mexico
EUROPE KOSMEK EUROPE GmbH	**TEL. +43-463-287587**	FAX. +43-463-287587-20 Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria
China KOSMEK（CHINA）LTD. 考世美(上海)貿易有限公司	**TEL. +86-21-54253000**	FAX. +86-21-54253709 Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China 中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125
India KOSMEK LTD - INDIA	**TEL. +91-9880561695**	F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India
Thailand Thailand Representative Office	**TEL. +66-2-300-5132**	FAX. +66-2-300-5133 67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand
Taiwan (Taiwan Exclusive Distributor) Full Life Trading Co., Ltd. 盈生貿易有限公司	**TEL. +886-2-82261860**	FAX. +886-2-82261890 16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511 台湾新北市中和區建八路2號 16F－4（遠東世紀廣場）
Philippines (Philippines Exclusive Distributor) G.E.T. Inc, Phil.	**TEL. +63-2-310-7286**	FAX. +63-2-310-7286 Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427
Indonesia (Indonesia Exclusive Distributor) PT. Yamata Machinery	**TEL. +62-21-29628607**	FAX. +62-21-29628608 Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti, Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia

Sales Offices in Japan

Head Office Osaka Sales Office Overseas Sales	**TEL. 078-991-5162**	FAX. 078-991-8787 〒651-2241　兵庫県神戸市西区室谷2丁目1番5号
Tokyo Sales Office	**TEL. 048-652-8839**	FAX. 048-652-8828 〒331-0815　埼玉県さいたま市北区大成町4丁目81番地
Nagoya Sales Office	**TEL. 0566-74-8778**	FAX. 0566-74-8808 〒446-0076　愛知県安城市美園町2丁目10番地1
Fukuoka Sales Office	**TEL. 092-433-0424**	FAX. 092-433-0426 〒812-0006　福岡県福岡市博多区上牟田1丁目8-10-101

Global Network



Asia Detailed Map

KOSMEK
Harmony in Innovation

- FOR FURTHER INFORMATION ON UNLISTED SPECIFICATIONS AND SIZES, PLEASE CALL US.
- SPECIFICATIONS IN THIS CATALOG ARE SUBJECT TO CHANGE WITHOUT NOTICE.

ISO 9001
JQA-QMA10823
KOSMEK HEAD OFFICE
JAB
CM009