

5200LA 气动薄膜式直行程执行机构

Linear Stem Motion Type Pneumatic Diaphragm Actuators

概要

该系列是一种采用多弹簧结构，重量轻、体积小、性能高、出力大的直行程气动薄膜式执行机构。其工作原理为：由调节仪表来的电或气信号经定位器转换而成的气压被输入到膜室内，作用于膜片上产生推力，使输出轴移动，同时压缩弹簧直至和弹簧的反作用力相平衡，使输出轴到达预定的位置。位置控制也可以通过气信号(20 ~ 100 KPa)直接作用于膜片上来实现。

该执行机构如与 KOSO 公司的定位器配合使用可以实现高精度的位置控制。

GENERAL

This Series provides high performance, high power diaphragm actuators of multi-spring type that are compact and light. Receiving pneumatic or electric signals, the unit balances the force created when diaphragm is airpressured through positioner and the force of compressed spring, so that the output shaft is controlled and placed at a set position. Control of position by pneumatic signals(20 ~ 100 KPa) directly applied on diaphragm is also possible.

Combination with KOSO positioner provides high accuracy position control.

标准规格 STANDARD SPECIFICATIONS

型 号 Series	5200LA
形 式 Type	多弹簧型 Multi-spring type
尺 寸 Size	218、270、350、450、650
动 作 Function	正作用型 (DA) : 气压增加输出轴下降 反作用型 (RA) : 气压增加输出轴上升 Direct acting (DA) : Air to output shaft down. Reverse acting (RA) : Air to output shaft up.
输 出 力 Output force	请参见表 1。 See Table 1.
行 程 Stroke	请参见表 2。 See Table 2.
气 源 压 力 Air supply	140 KPa G、300 KPa G、340 KPa G
弹 簧 范 围 Spring range	20 ~ 100 KPa G、80 ~ 200 KPa G 120 ~ 300 KPa G 尺寸：仅限于 218、270 Size : 218、270 only
配 管 接 口 Air connection	请参见第 4 ~ 13 页。 See page 4 ~ 13.
性 能 Performance	滞 后 : 带定位器时..... 0.8%FS 以内 带定位器时 (弹簧范围 120 ~ 300)..... 1.0%FS 以内 不带定位器时..... 5%FS 以内 直线性 : 带定位器时..... ± 1.5%FS 以内 带定位器时 (弹簧范围 120 ~ 300)..... ± 2.0%FS 以内 不带定位器时 ± 4%FS 以内 Hysteresis : Less than 0.8% of Full stroke with positioner. Less than 1.0% of Full stroke with positioner for Spring range 120 ~ 300 KPa G. Less than 5% of Full stroke without positioner. Linearity : Less than ± 1.5% of Full stroke with positioner. Less than ± 2% of Full stroke with positioner for Spring range 120 ~ 300 KPa G. Less than ± 4% of Full stroke without positioner. * 调节阀的滞后和直线性因使用填料材质的不同而有所差异。 * The above hysteresis and linearity vary depending on the gland packing material of the control valves.
环 境 温 度 Ambient temperature	标准型 Standard type..... - 10 ~ + 70 高温型(选购) High temperature service (option)..... 0 ~ + 100 低温型(选购) Low temperature service (option)..... - 40 ~ + 40

材 质 Materials	膜 盖 Diaphragm case 碳钢 SPHE 膜 片 Diaphragm 三元乙丙胶 EPDM 输 出 轴 Drive shaft 不锈钢 SUS303 支 架 Yoke 铸铁 FC
表面 涂层 Painting	银灰色 N-6 (环氧树脂) Mansell N-6 (Epoxy resin group)
附 件 Accessories	E / P 定位器、P / P 定位器、空气过滤减压器、增压器、气控阀、限位开关、电磁阀、锁止阀、调速器、位置发送器等。 E / P Positioner, P / P Positioner, Air-set, Booster relay, Air-valve, Limit switch, Solenoid valve, Lock-valve, Speed controller, Position transmitter, etc.
选购 设备 Option	手动操作机构、支架材料、特殊空气配管及特殊气接头、低温环境用、高温环境用、热带地区用、防盐腐蚀型、寒冷地区用、指定涂层色等。 Manual handwheel, Yoke material, Special air piping, Special air fitting, Low temperature service, High temperature service, Tropical area proof, Salty environment proof, Cold area proof, Non-standard painting, etc.

表 1. 输出力

Table 1. OUTPUT FORCE

不平衡 Off balance Kpa G	弹簧范围 Spring range Kpa G	气源压力 Air supply Kpa G	输出力 OUTPUT FORCE (N)				
			执行机构尺寸 Actuator size				
			218	270	350	450	650
20	DA&RA : 20 ~ 100	140	362	608	1078	1863	—
80	DA&RA : 80 ~ 200	300	1451	2432	4314	7453	16475
120	DA : 80 ~ 200	340	2186	3648	—	—	—
	RA : 120 ~ 300	340					

表 2. 行程及容量

Table 2. STANDARD STROKE AND VOLUME

执行机构尺寸 Actuator size	218	270	350	450S	450L	650S	650L
型 号 Code No.	5221LA	5227LA	5235LA	524SLA	524LLA	526SLA	526LLA
行 程 Stroke (mm)	20	20, 25, 30	20, 25, 30, 40	20, 25, 30, 40	50, 60, 70, 80	30, 40, 50, 60	70, 80, 90, 100, 110
容 量 Volume (l)	0.7	1.6	3.3	6	10	29	41

表 3. 重量(不包括附件)

Table 3. WEIGHT WITHOUT ACCESSORIES

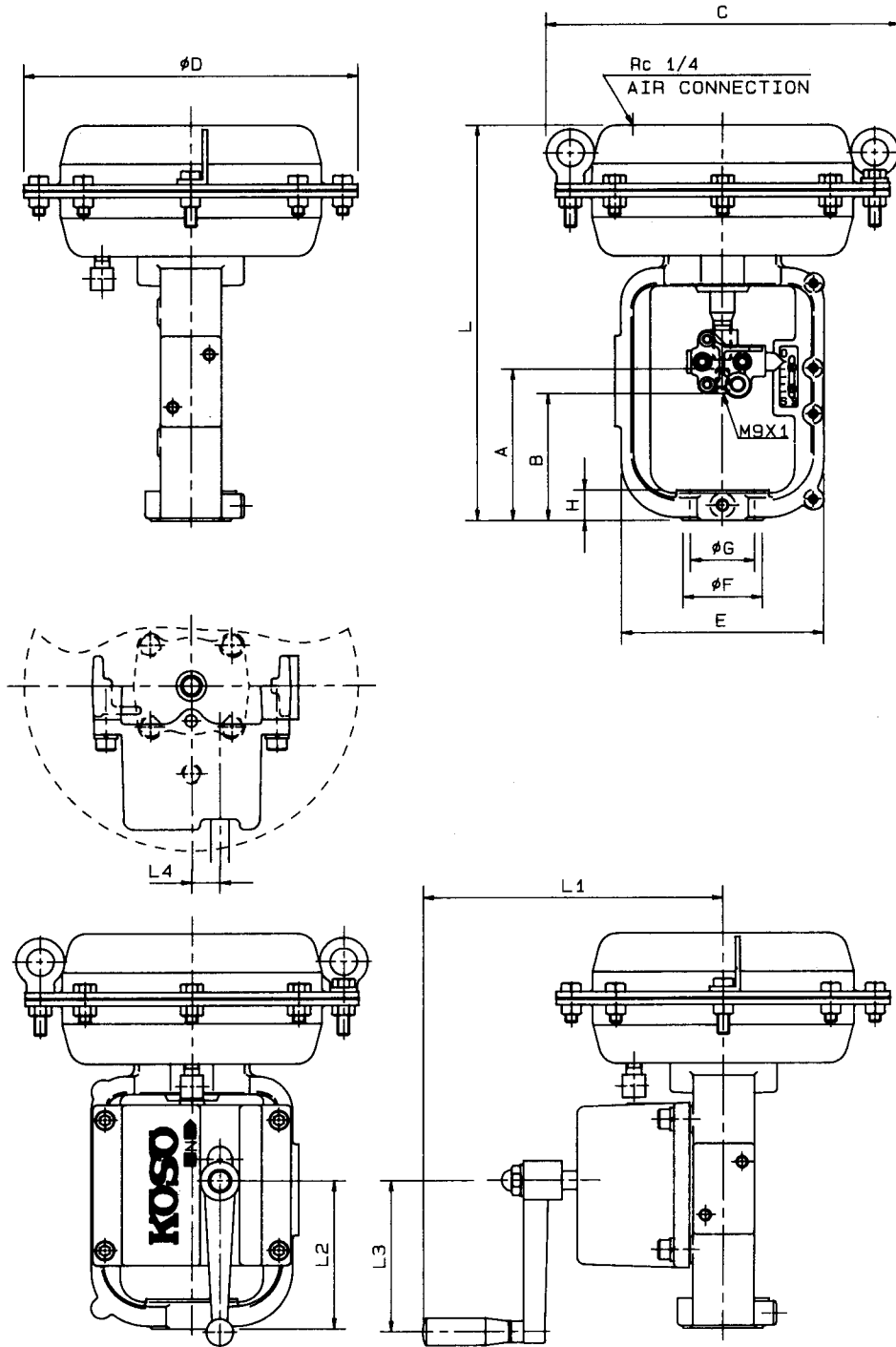
单位 : kg

执行机构 尺寸 Actuator size	型号 Code No.	不带手轮机构 Without Manual handle		带手轮机构 With Manual handle	
		重 量 Weight	支架图号 Yoke Drawing No.	重 量 Weight	支架图号 Yoke Drawing No.
218	5221LA	8.5	E-5200LA-551T-DN, E-5200LA-551T-RN	12.5	E-5200LA-551T-DS, E-5200LA-551T-RS
		9	E-5200LA-501T-DN, E-5200LA-501T-RN	13	E-5200LA-501T-DS, E-5200LA-501T-RS
270	5227LA	14	E-5200LA-551T-DN, E-5200LA-551T-RN	20	E-5200LA-551T-DS, E-5200LA-551T-RS
		15	E-5200LA-501T-DN, E-5200LA-501T-RN	25	E-5200LA-501T-DS, E-5200LA-501T-RS
350	5235LA	37	E-5200LA-501T-DN, E-5200LA-501T-RN	47	E-5200LA-501T-DS, E-5200LA-501T-RS
450S	524SLA	65	E-5200LA-501T-DN, E-5200LA-501T-RN	77	E-5200LA-501T-DS, E-5200LA-501T-RS
450L	524LLA	87	E-524LLA-501T-DN, E-524LLA-501T-RN	100	E-524LLA-501T-DS, E-524LLA-501T-RS
650S	526SLA	192	E-526SLA-501T-DN, E-526SLA-501T-RN	232	E-526SLA-501T-DS, E-526SLA-501T-RS
650L	526LLA	223	E-526LLA-501T-DN, E-526LLA-501T-RN	272	E-526LLA-501T-DS, E-526LLA-501T-RS

* 支架图号请见第 4 ~ 13 页。

The above drawing numbers, see page 4 ~ 13.

DIAPHRAGM ACTUATOR (DIRECT ACTION)



☐ WITH MANUAL HANDLE

DIMENSIONS											UNIT: mm				
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	MAX Stroke	WITH MANUAL HANDLE			
												L1	L2	L3	L4
☐ 5221LA	218	218	231	52	262	100	85	130	42	20	20	196	112-92	100	18.5
☐ 5227LA	270	270	283	52	330	100	85	160	42	20	20	230	115-95	100	27.5

NOTE:

DRAWING No.

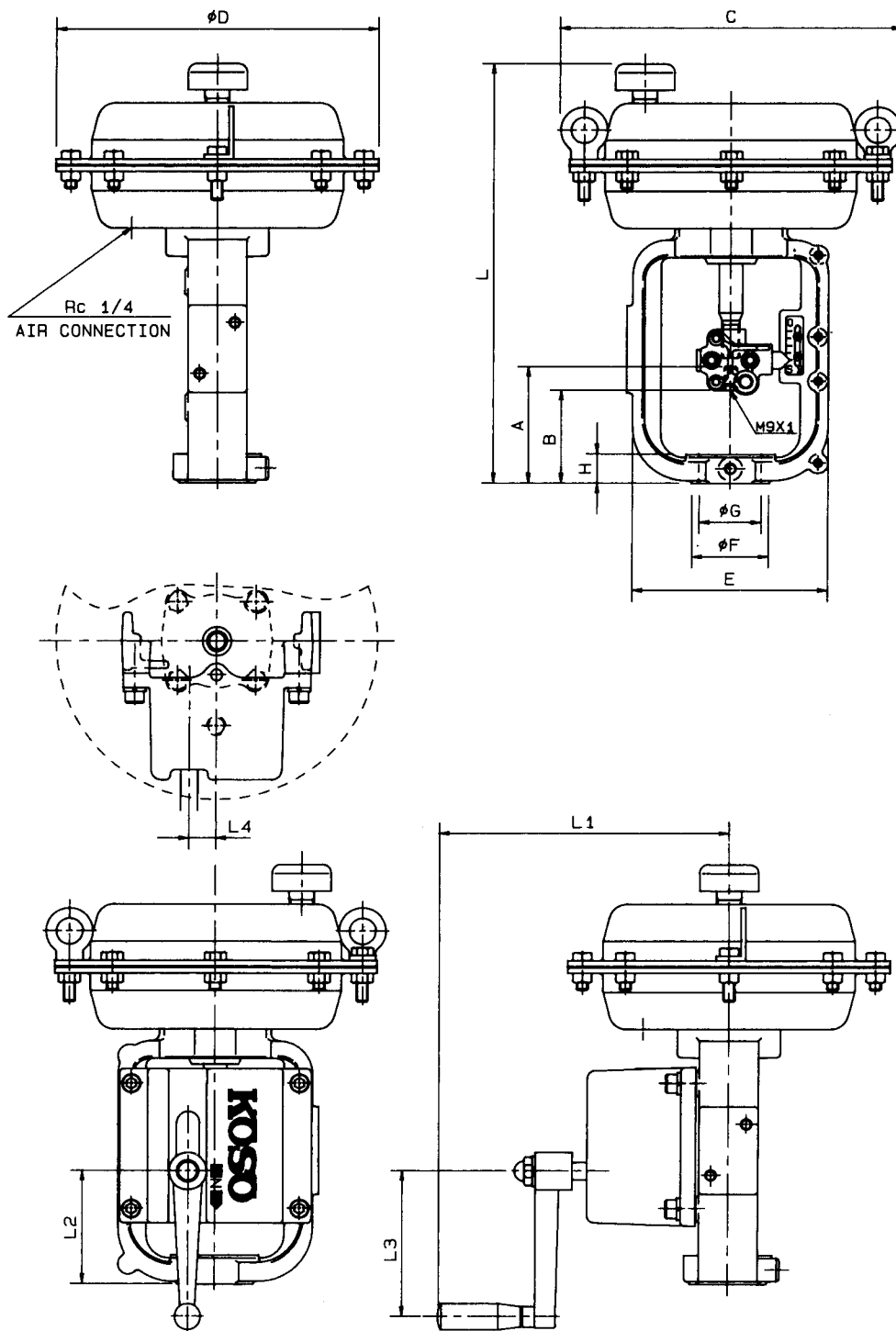
E-5200LA-551T-D-N
S

REV

F

KOSO

DIAPHRAGM ACTUATOR (REVERSE ACTION)



□ WITH MANUAL HANDLE

DIMENSIONS													UNIT: mm			
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	MAX Stroke	WITH MANUAL HANDLE				
												L1	L2	L3	L4	
□ 5221LA	218	218	231	52	302	80	65	130	42	20	20	196	78-98	100	18.5	
□ 5227LA	270	270	283	52	370	80	65	160	42	20	20	230	83-103	100	27.5	

NOTE:

DRAWING No.

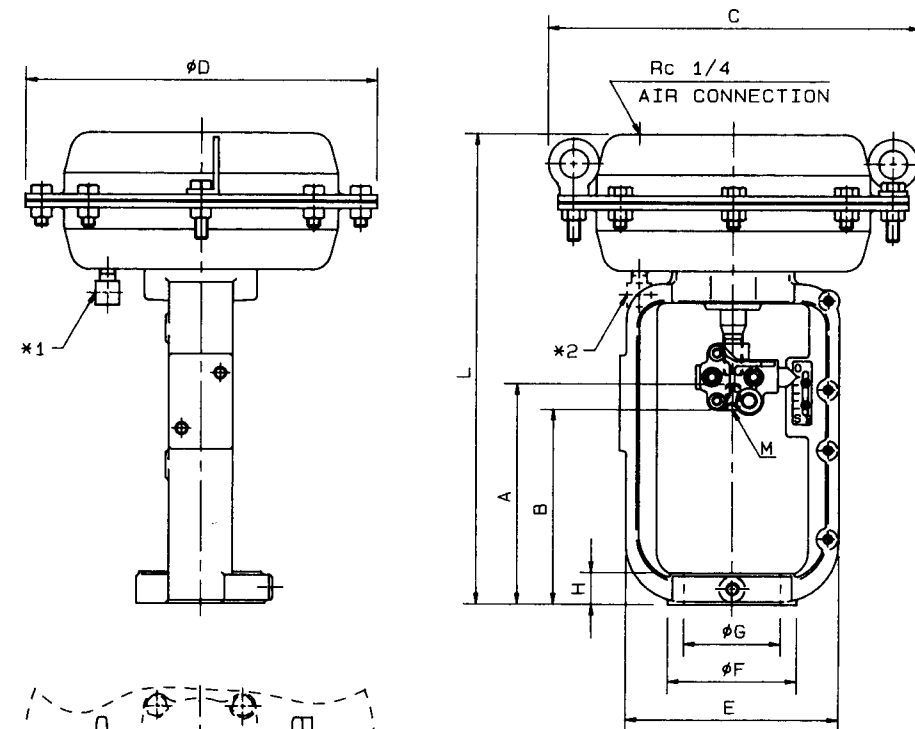
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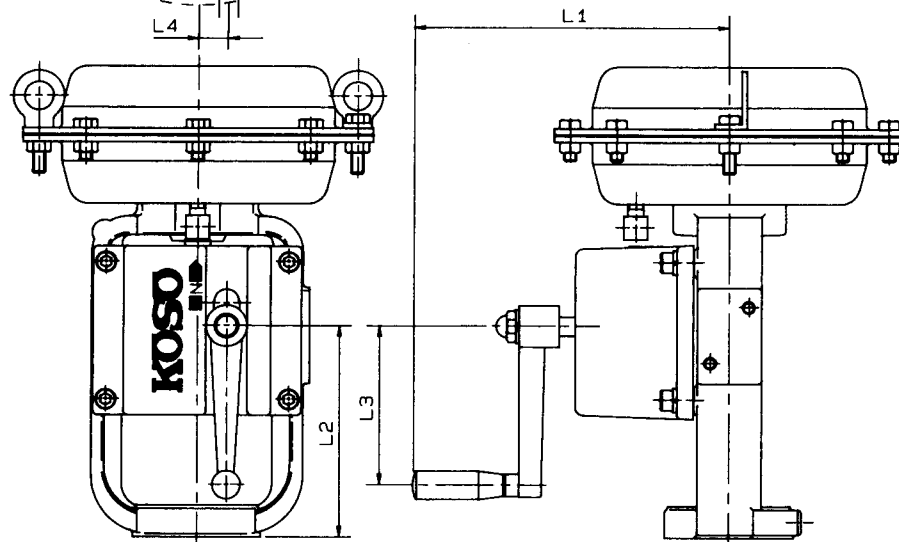
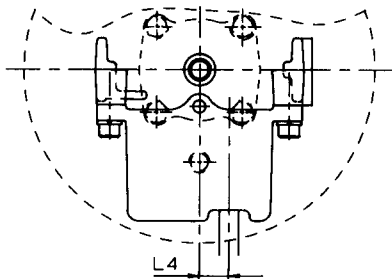
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KOSO

DIAPHRAGM ACTUATOR (DIRECT ACTION)



*1 AIR EXHAUST POSITION FOR $\phi 218$ & $\phi 270$.
 *2 AIR EXHAUST POSITION FOR $\phi 350$ & $\phi 450$.



☐ WITH MANUAL HANDLE

DIMENSIONS												UNIT: mm				
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	M	MAX Stroke	WITH MANUAL HANDLE			
													L1	L2	L3	L4
☐ 5221LA	218	218	231	80	297	139	120	130	60	20	M9X1 M12X1	20	196	133-113	100	18.5
☐ 5227LA	270	270	283	80	395	149	130	160	60	20	M9X1 M12X1	30	230	165-135	100	27.5
☐ 5235LA	350	350	367	80	430	160	140	160	60	20	M12X1	40	230	183-143	100	27.5
☐ 524SLA	450S	450	472	100	495	205	175	190	80	30	M16X 1.5	40	336	220-180	160	32

NOTE:

DRAWING No.

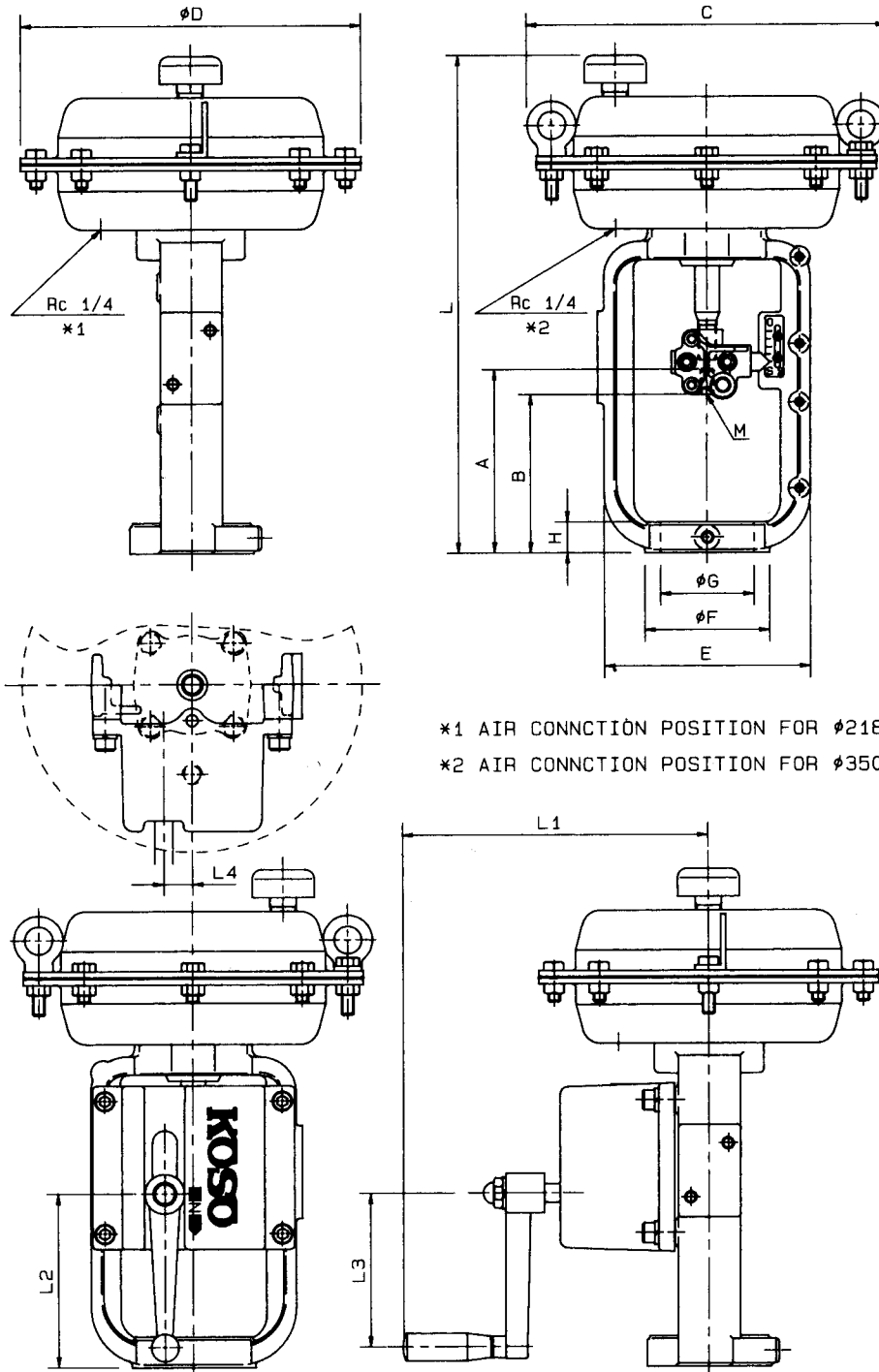
E-5200LA-501T-D-N
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KOSO

DIAPHRAGM ACTUATOR (REVERSE ACTION)



*1 AIR CONNECTION POSITION FOR $\phi 218$ & $\phi 270$.
 *2 AIR CONNECTION POSITION FOR $\phi 350$ & $\phi 450$.

□ WITH MANUAL HANDLE

DIMENSIONS

UNIT: mm

SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	M	MAX Stroke	WITH MANUAL HANDLE			
													L1	L2	L3	L4
□ 5221LA	218	218	231	80	337	119	100	130	60	20	M9X1 M12X1	20	196	113-133	100	18.5
□ 5227LA	270	270	283	80	435	119	100	160	60	20	M9X1 M12X1	30	230	118-148	100	27.5
□ 5235LA	350	350	367	80	470	120	100	160	60	20	M12X1	40	230	120-160	100	27.5
□ 524SLA	450S	450	472	100	535	165	135	190	80	30	M16X 1.5	40	336	161-201	160	32

NOTE :

DRAWING No.

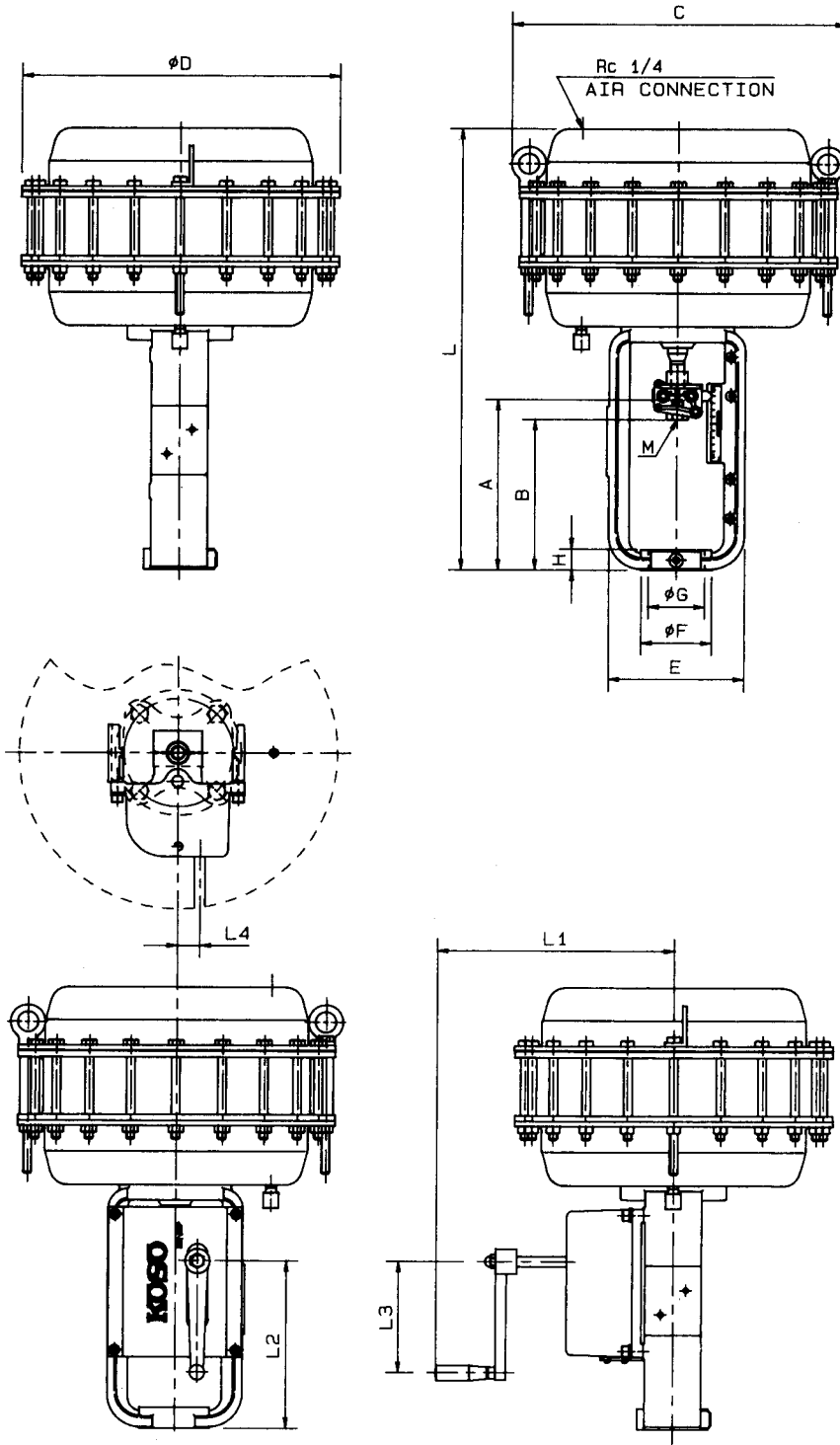
E-5200LA-501T-R-S

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KOSO

DIAPHRAGM ACTUATOR (DIRECT ACTION)



☐ WITH MANUAL HANDLE

DIMENSIONS													UNIT: mm			
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	M	MAX Stroke	WITH MANUAL HANDLE			
													L1	L2	L3	L4
☐ 524LLA	450	450	472	100	635	245	215	190	80	30	M16 X1.5	80	336	260-180	160	32
☐ 524ELA	450	450	472	130	655	265	235	190	100	30	M24 X3	80	336	280-200	160	32

NOTE:

DRAWING No.

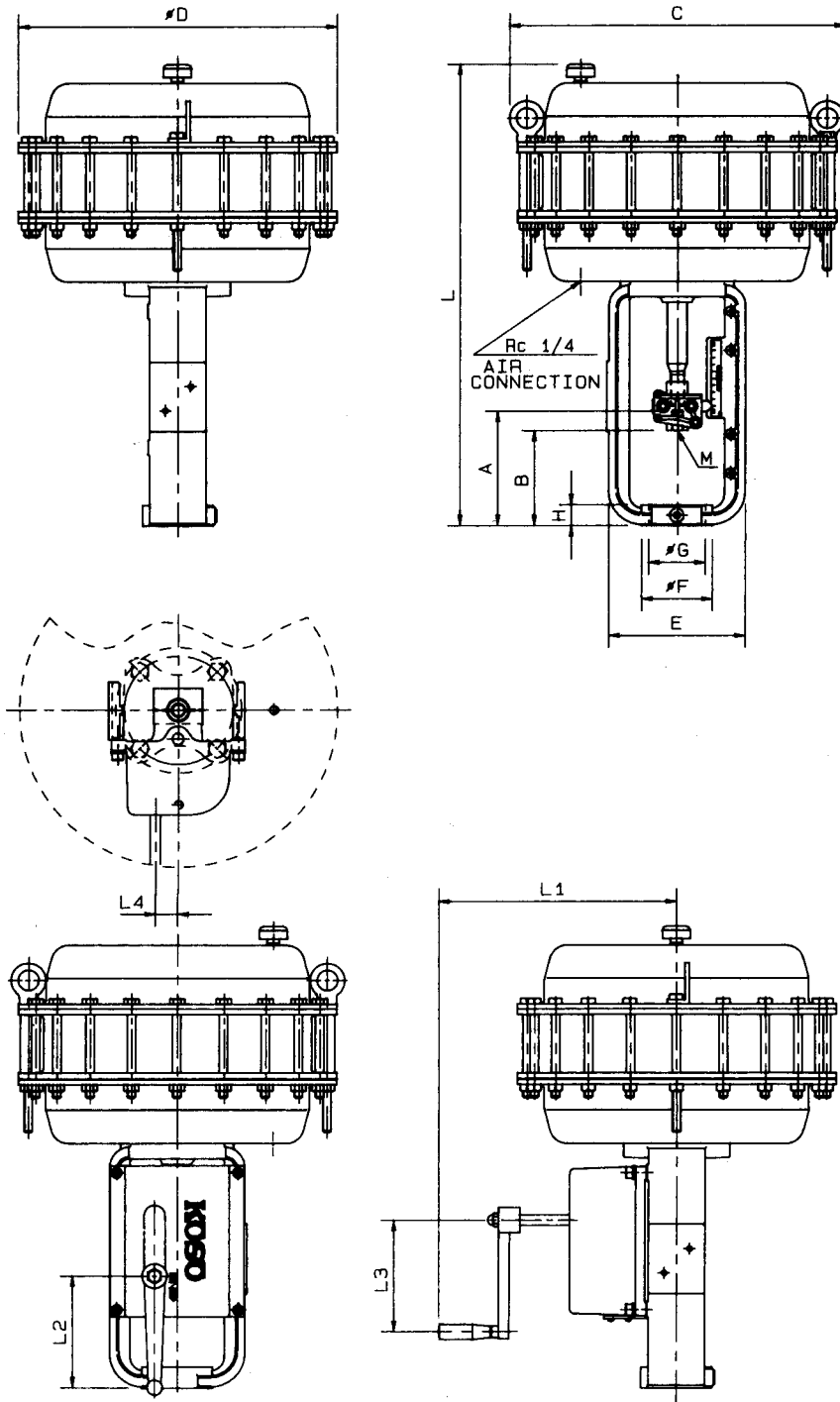
E-524LLA-501T-D-N-S

REV

D

KOSO

DIAPHRAGM ACTUATOR (REVERSE ACTION)



WITH MANUAL HANDLE

DIMENSIONS													UNIT: mm			
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	M	MAX Stroke	WITH MANUAL HANDLE			
													L1	L2	L3	L4
<input type="checkbox"/> 524LLA	450	450	472	100	675	165	135	190	80	30	M16 X1.5	80	336	161-241	160	32
<input type="checkbox"/> 524ELA	450	450	472	130	695	185	155	190	100	30	M24 X3	80	336	181-261	160	32

NOTE :

DRAWING No.

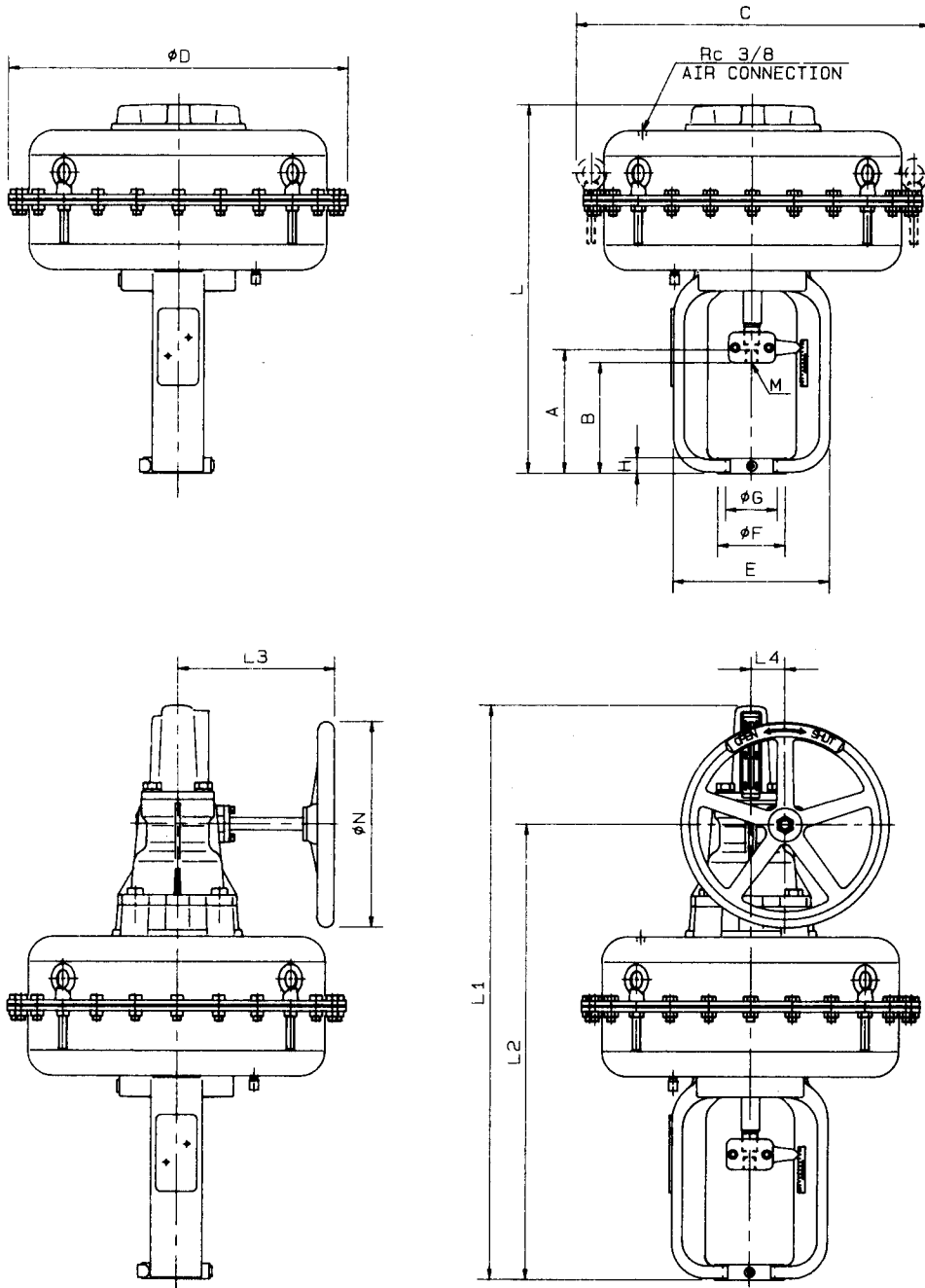
E-524LLA-501T-R-^N_S

REV

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KOSO

DIAPHRAGM ACTUATOR (DIRECT ACTION)



WITH MANUAL HANDLE

DIMENSIONS													UNIT: mm				
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	M	MAX Stroke	WITH MANUAL HANDLE				
													ϕN	L1	L2	L3	L4
<input type="checkbox"/> 526SLA	650	650	678	130	717	245	215	300	100	30	M24 X3	60	400	1117	885	302	65

NOTE

DRAWING No.

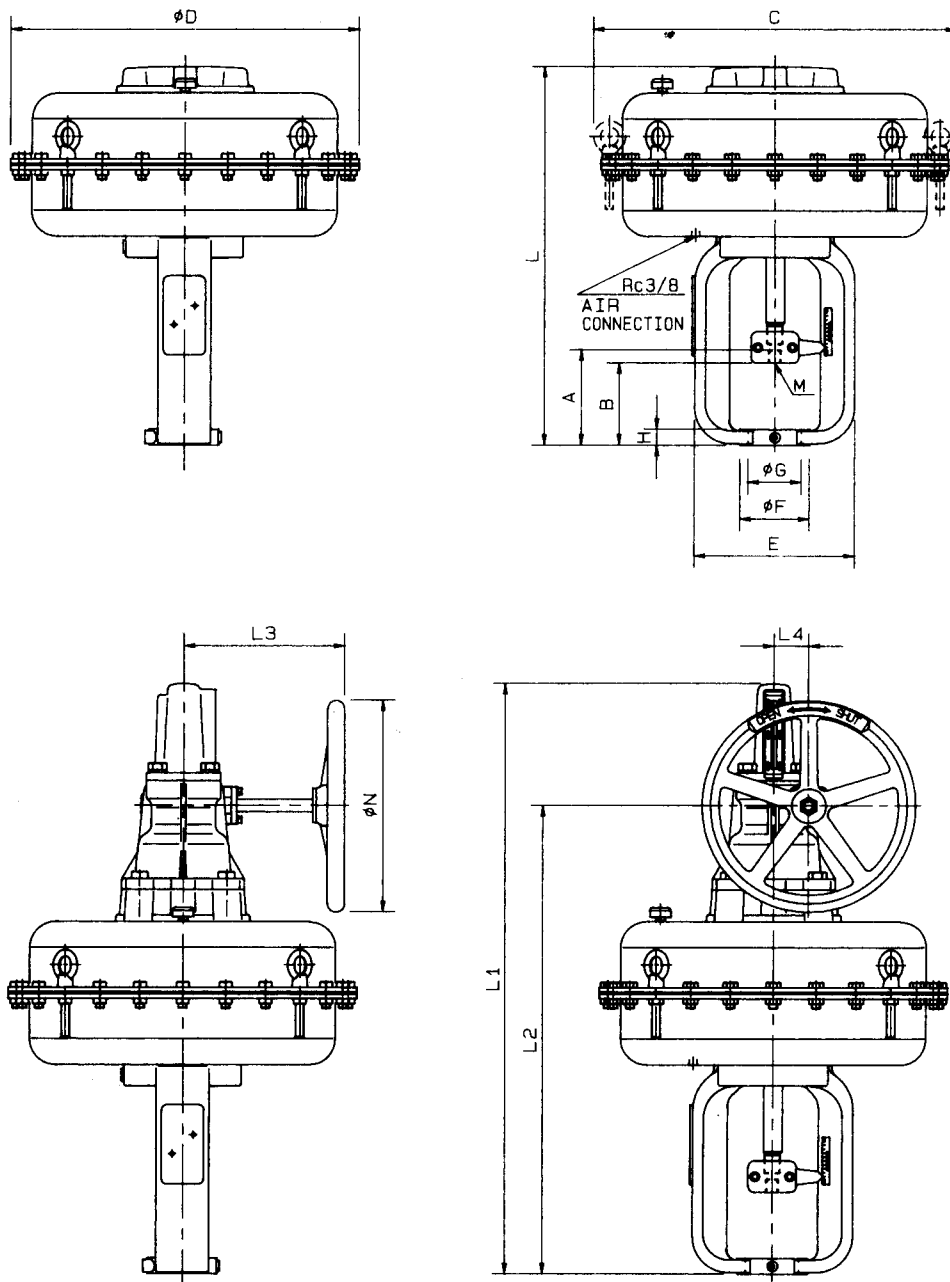
E-526SLA-501T-D-N
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REV

B

KOSO

DIAPHRAGM ACTUATOR (REVERSE ACTION)



☐ WITH MANUAL HANDLE

DIMENSIONS													UNIT: mm				
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	M	MAX Stroke	WITH MANUAL HANDLE				
													ϕN	L1	L2	L3	L4
☐ 526SLA	650	650	678	130	717	185	155	300	100	30	M24 X3	60	400	1117	885	302	65

NOTE :

DRAWING No.

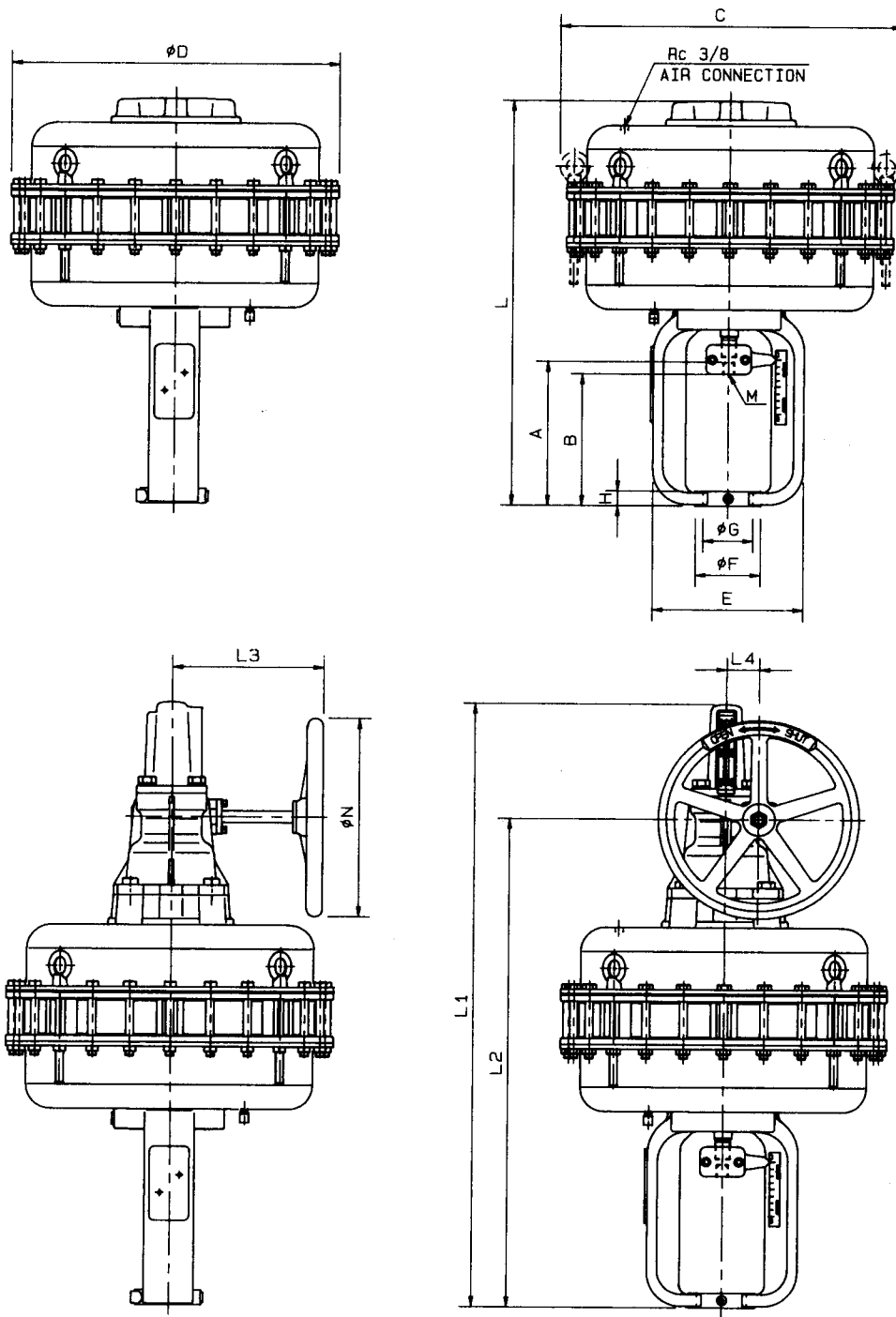
E-526SLA-501T-R-N

REV

B

KOSO

DIAPHRAGM ACTUATOR (DIRECT ACTION)



☐ WITH MANUAL HANDLE

DIMENSIONS														UNIT: mm			
SIZE CODE	SIZE	φD	C	φF	L	A	B	E	φG	H	M	MAX Stroke	WITH MANUAL HANDLE				
													φN	L1	L2	L3	L4
☐ 526LLA	650	650	678	130	817	295	265	300	100	30	M24 X3	110	400	1217	985	302	65

NOTE :

DRAWING No.

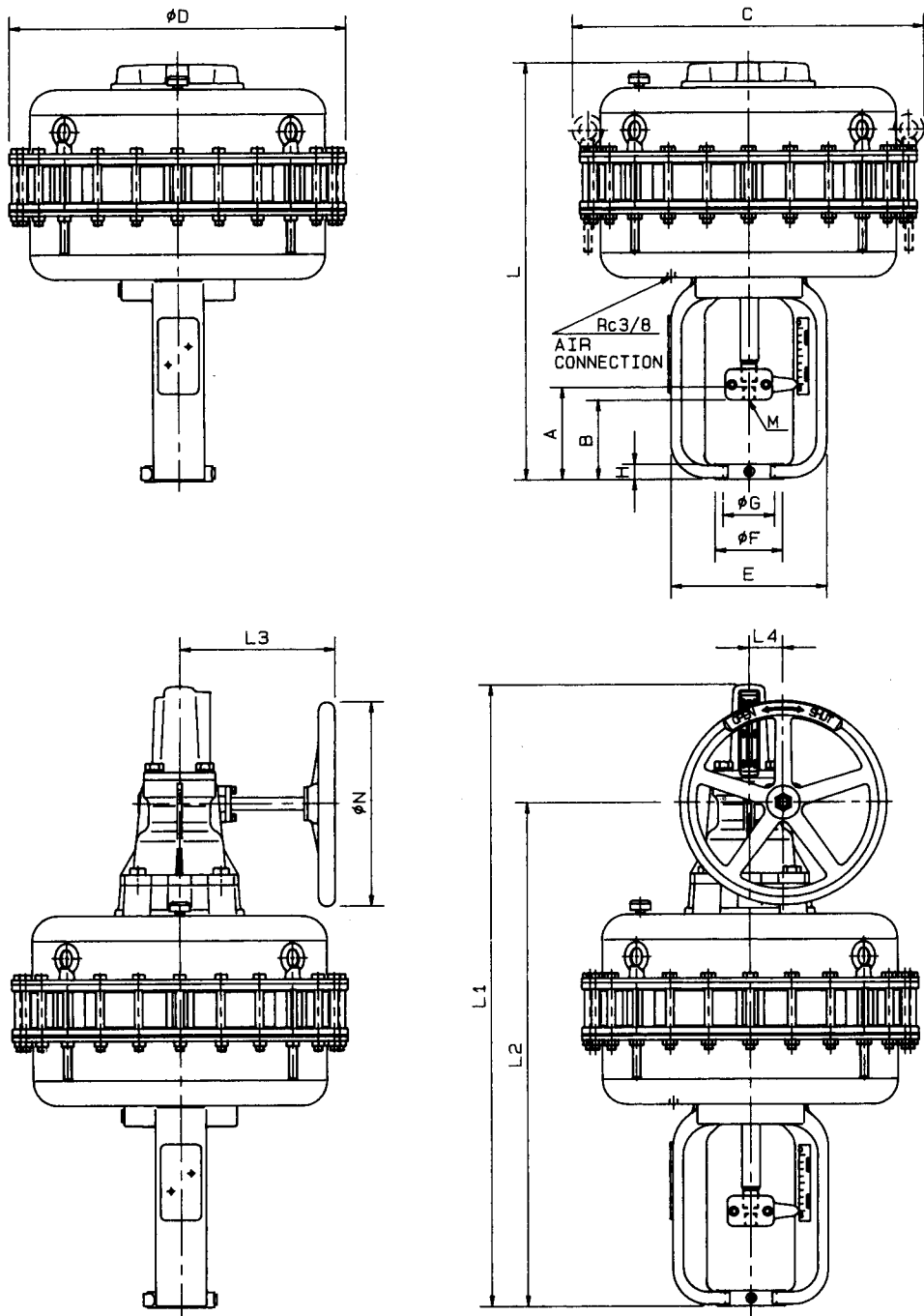
E-526LLA-501T-D-N
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DIAPHRAGM ACTUATOR (REVERSE ACTION)



WITH MANUAL HANDLE

DIMENSIONS													UNIT: mm				
SIZE CODE	SIZE	ϕD	C	ϕF	L	A	B	E	ϕG	H	M	MAX Stroke	WITH MANUAL HANDLE				
													ϕN	L1	L2	L3	L4
<input type="checkbox"/> 526LLA	650	650	678	130	817	185	155	300	100	30	M24 X3	110	400	1217	985	302	65

NOTE:

DRAWING No.

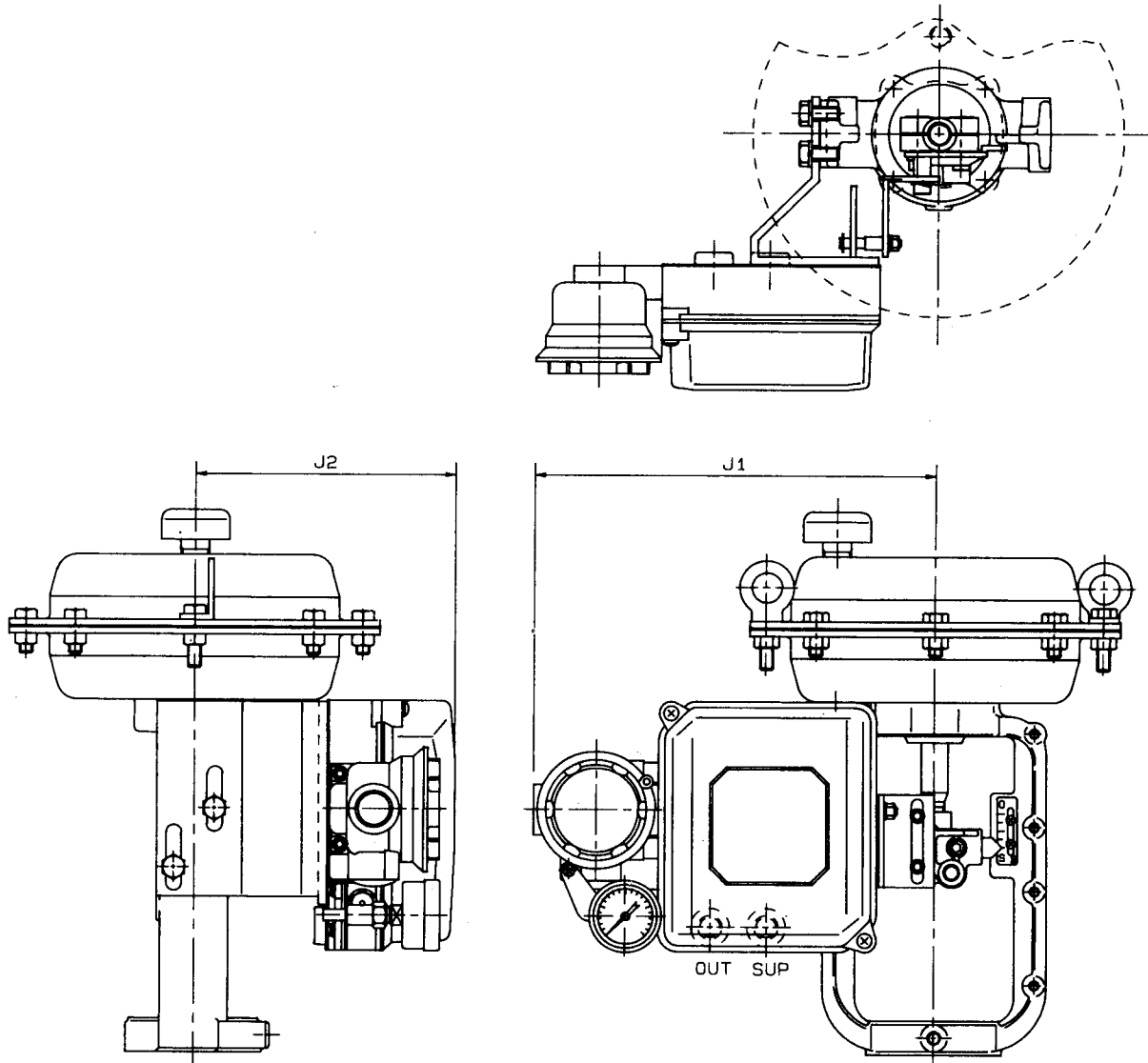
E-526LLA-501T-R-N S

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KOSO

DIAPHRAGM ACTUATOR



DIMENSIONS		UNIT: mm	
ACTUATOR SIZE CODE	ACTUATOR SIZE	J1	J2
□ 5221LA	218	240	155
□ 5227LA	270	250	160
□ 5235LA	350	245	160
□ 524SLA	450S	260	160
□ 524LLA	450L	255	205
□ 524ELA	450E	255	205

NOTE :

DRAWING No.

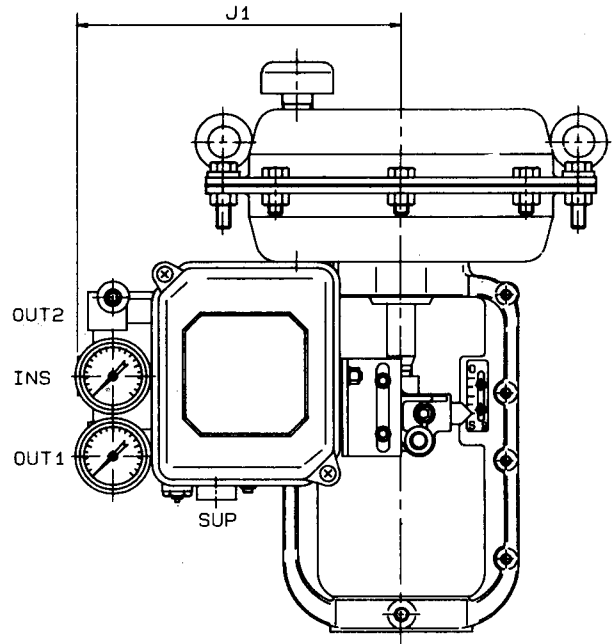
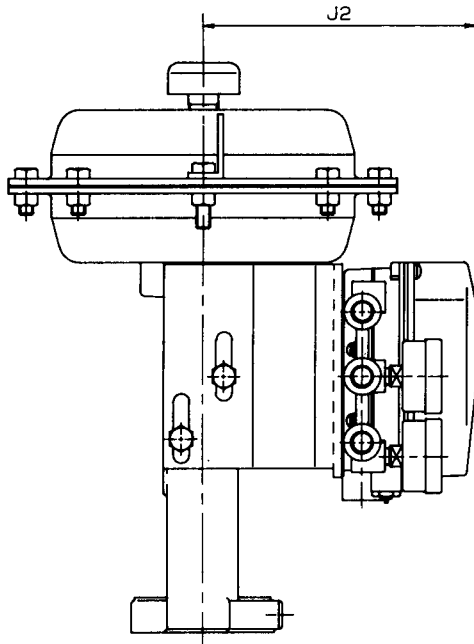
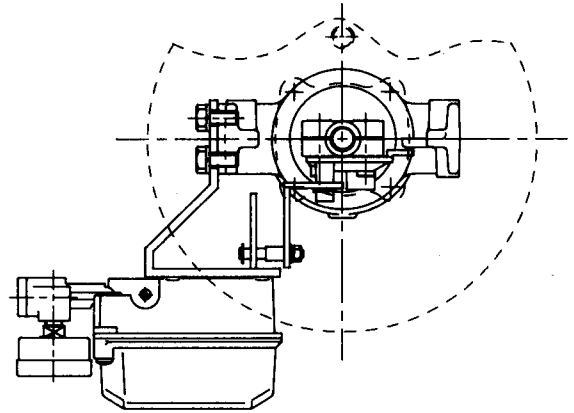
E-5200LA-EPB800

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KOSO

DIAPHRAGM ACTUATOR



DIMENSIONS		UNIT: mm	
ACTUATOR SIZE CODE	ACTUATOR SIZE	J1	J2
□ 5221LA	218	185	155
□ 5227LA	270	200	160
□ 5235LA	350	195	160
□ 524SLA	450S	210	160
□ 524LLA	450L	205	205
□ 524ELA	450E	205	205

NOTE:

DRAWING No.

E-5200LA-PPA800

REV

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KOSO