

6400RB 气动角行程式执行机构 Rotary Stem Motion Type Pneumatic Cylinder Actuators

概要

该系列是一种大出力、高性能的四气缸双动作型气动执行机构。与角行程调节阀组合使用，可用于调节和开关的场合。

该系列也可用于其它回转运动的场合。

GENERAL

This Series provides pneumatic double-acting 4-piston torque cylinder actuators characterized by large output and high-performance. Combined with rotary stem motion type control valves, the actuators of this Series are suited for modulating and on-off services. Uses with other rotary motion devices are also good.

标准规格 STANDARD SPECIFICATIONS

系 列 Series	6400RB
规 格 Size	200、280
输出方式 Output type	角行程式 Rotary stem motion type
动 作 Function	双动作型 Double acting type
输出力矩 Output Torque	请参见表 1。 See Table 1.
气源压力 Air supply	300 ~ 500 KPa G
配管接口 Air connection	请参见第 7 ~ 8 页。 See page 7 ~ 8.
回 转 角 度 Angle rotation	90 ° or 60 °
性 能 Performance	滞 后 : 带定位器与增速器时..... 1.5%FS 以内 直线性 : 带定位器与增速器时..... ± 2.0%FS 以内 Hysteresis : Less than 1.5% of full stroke with positioner and booster Linearity : Less than ± 2.0% of full stroke with positioner and booster
环 境 温 度 Ambient temperature	标准型 Standard type..... - 20 ~ + 60 高温型(选购) High temperature service (option)..... 0 ~ + 100 低温型(选购) Low temperature service (option)..... - 50 ~ + 60
材 质 Materials	气 缸 Cylinder : 碳钢管 Steel pipe 活 塞 Piston : 铝合金 Aluminum alloy 曲 柄 Torque lever : FCD 渗氮硬化 FCD Nitriding O 形 圈 Piston-ring : NBR or VITON 输出轴套 Drive sleeve : S20C S20C 箱 体 Case : FCD Cast iron 螺 栓 螺 母 Bolts & nuts : 镀锌钢材 Uni-chrome plated steel
表面涂层色 Painting color	银灰色 (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、增速器、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、输出轴限位装置、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, Rotation stopper, 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.

因该系列执行机构的气缸容量较大，在使用定位器时应与增速器配套使用。
This Series requires Positioner + Booster, due to large cylinder capacity.

图1 构造

Fig.1 CONSTRUCTION

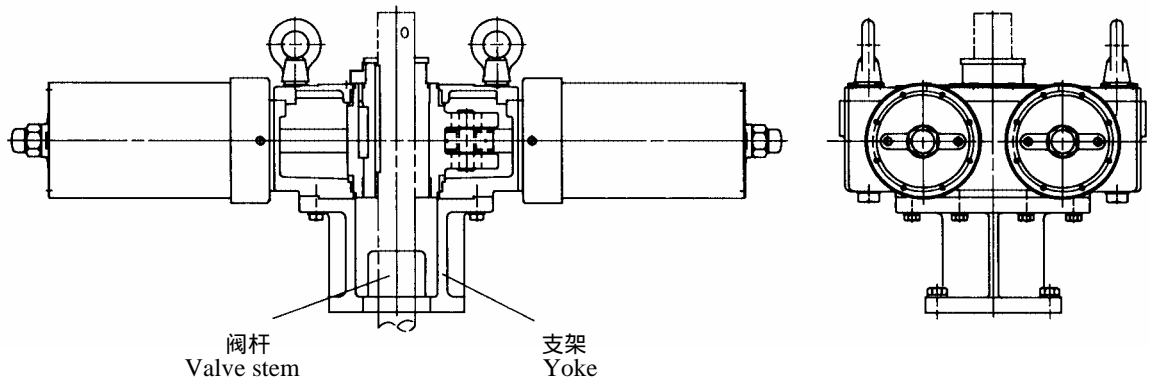
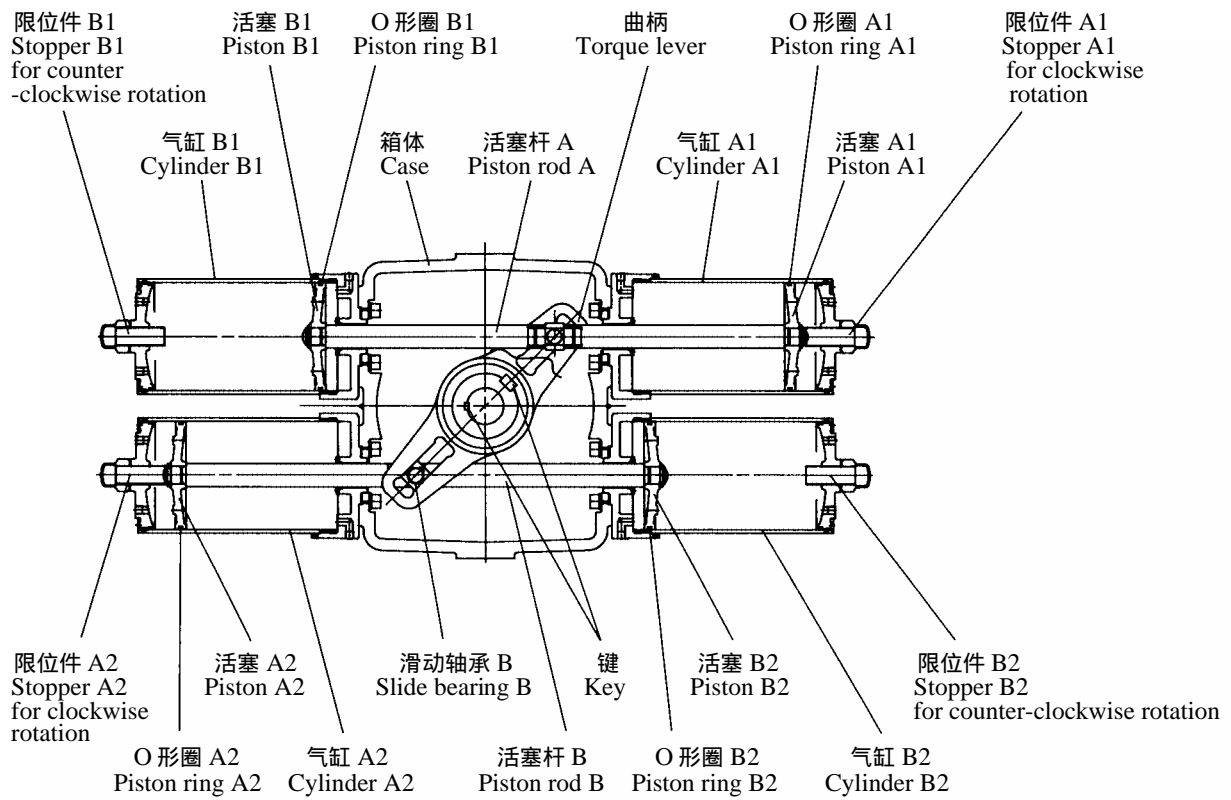


表1 输出力矩及概重

Table 1 OUTPUT TORQUE AND WEIGHT

执行机构尺寸 Actuator size	输出力矩 Output Torque (N · m)			概重 Approximate weight (kg)	
	气源压力 Air supply KPa G			Without handwheel	With handwheel
	300	400	500		
200	5600	7500	9370	400	550
280	12300	16400	20500	600	900

图2 输出力矩特性 (气源压力 400 KPa G 时)

Fig. 2 TORQUE EXERTED WHEN AIR SUPPLY IS 400 KPa G

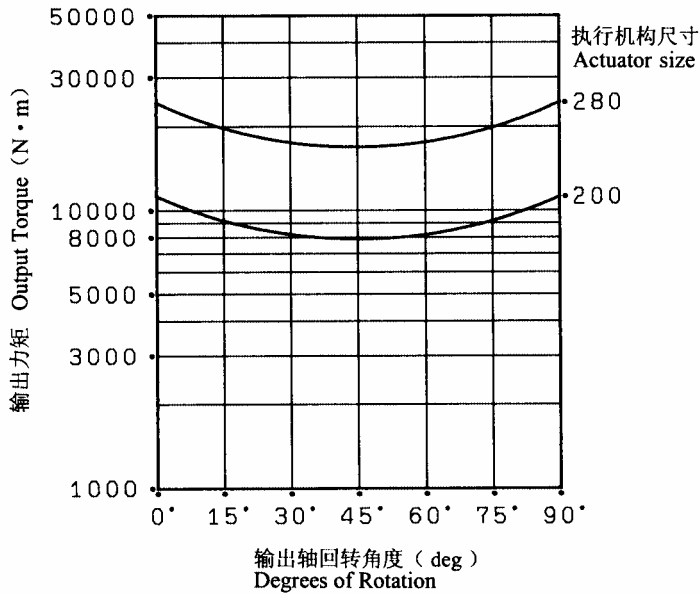
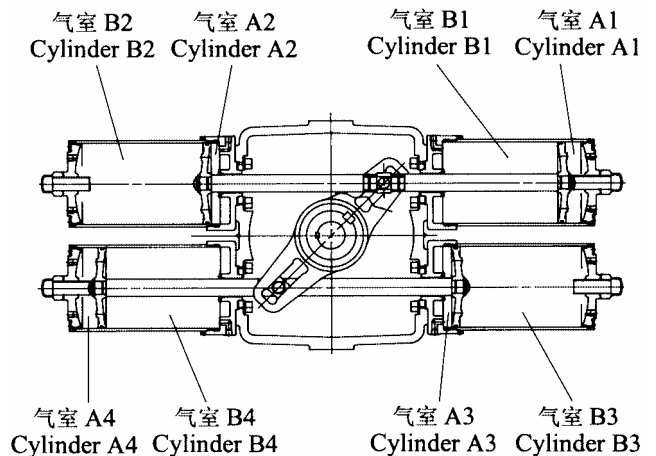


表2 气缸容量

Table 2 CYLINDER VOLUME

执行机构尺寸 Actuator size	气缸容量 Cylinder volume (l)		
	A	B	A+B
200	46	46	92
280	101	101	202



*A = 气室 Cylinder A1 + 气室 Cylinder A2 + 气室 Cylinder A3 + 气室 Cylinder A4

B = 气室 Cylinder B1 + 气室 Cylinder B2 + 气室 Cylinder B3 + 气室 Cylinder B4

A+B.....活塞往复一次的容量 One cycle for piston : 阀闭 Valve Shut 阀开 Valve Open 阀闭 Valve Shut 或 or 阀开 Valve Open 阀闭 Valve Shut 阀开 Valve Open

气缸的耗气量 AIR CONSUMPTION

$$V = (A+B) \{ (P+101.2) \div 98 \} M$$

V : 耗气量 Air consumption NI / min

P : 供给气源压力 Air supply KPa G

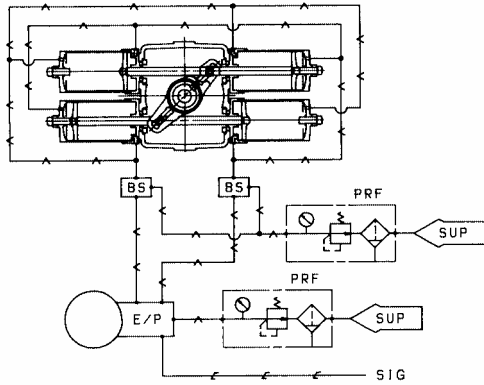
M : 动作次数 / 分 Action cycle / min

图 3 标准配管回路 (俯视图)

Fig. 3 SCHEMATIC DIAGRAM (ACTUATOR VIEWED FROM TOP)

图 3-1 定位器与增压器自动控制：气源压力降低 任意位置

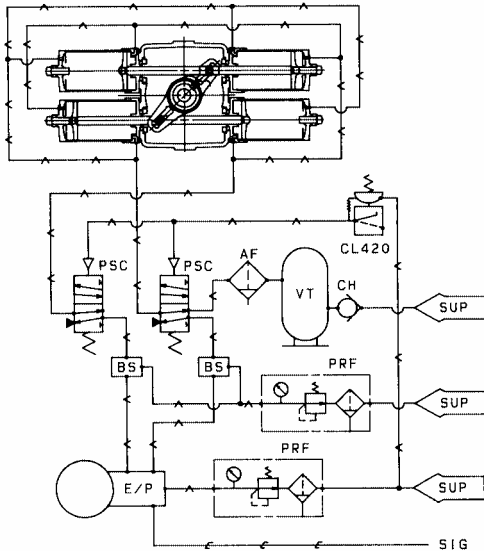
Fig. 3-1 MODULATION BY POSITIONER & BOOSTER : AIR FAILURE FREE POSITION



当输入定位器的调节信号增加时，输出轴的回转方向可以用定位器出口空气配管的连接方式来进行改变。
 Direction of drive shaft rotation against control signal increase can be changed by reversing positioner's output port connection.

图 3-2 定位器与增压器自动控制：气源压力降低 输出轴向右回转

Fig. 3-2 MODULATION BY POSITIONER & BOOSTER : AIR FAILURE CLOCKWISE DRIVE SHAFT ROTATION



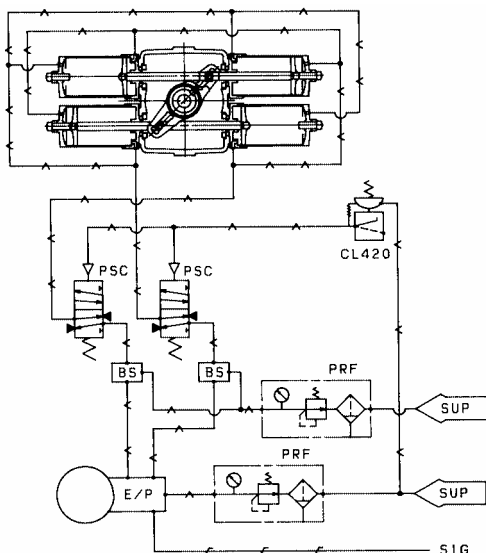
当输入定位器的调节信号增加时，输出轴的回转方向可以用定位器出口空气配管的连接方式来进行改变。
 Direction of drive shaft rotation against control signal increase can be changed by reversing positioner's output port connection.

气源压力降低使输出轴向左回转时，请把 VT (贮气罐) 出口的空气配管接到左侧的 PSC 上。

For air failure to counter-clockwise rotation, piping from VT is to be connected to PSC on the left.

图 3-3 定位器与增压器自动控制：气源压力降低 保持原位

Fig. 3-3 MODULATION BY POSITIONER & BOOSTER : AIR FAILURE AIR FAILURE POSITION LOCK



当输入定位器的调节信号增加时，输出轴的回转方向可以用定位器出口空气配管的连接方式来进行改变。
 Direction of drive shaft rotation against control signal increase can be changed by reversing positioner's output port connection.

图 3-4 电磁阀 ON-OFF 控制：气源压力降低 任意位置

Fig. 3-4 ON-OFF CONTROL BY SOLENOID VALVE : AIR FAILURE FREE POSITION

电磁阀励磁：输出轴向右回转

SOV ENERGIZED: CLOCKWISE DRIVE SHAFT ROTATION

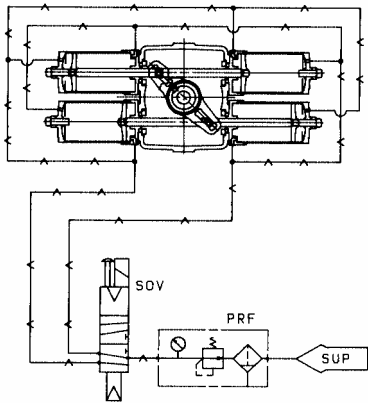
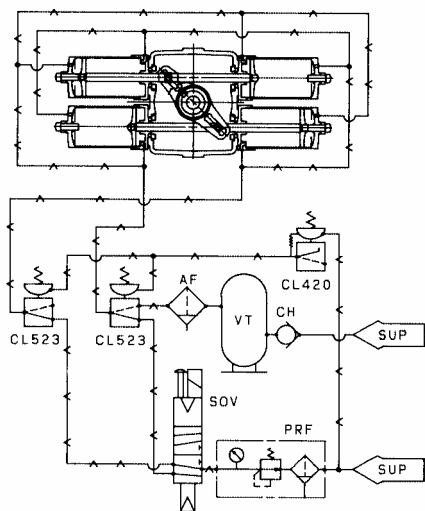


图 3-5 电磁阀 ON-OFF 控制：气源压力降低 输出轴向右回转

Fig. 3-5 ON-OFF CONTROL BY SOLENOID VALVE : AIR FAILURE CLOCKWISE DRIVE SHAFT ROTATION

电磁阀励磁：输出轴向右回转

SOV ENERGIZED: CLOCKWISE DRIVE SHAFT ROTATION



气源压力降低使输出轴向左回转时，请把 VT（贮气罐）出口的空气配管接到左侧的 CL523 上。

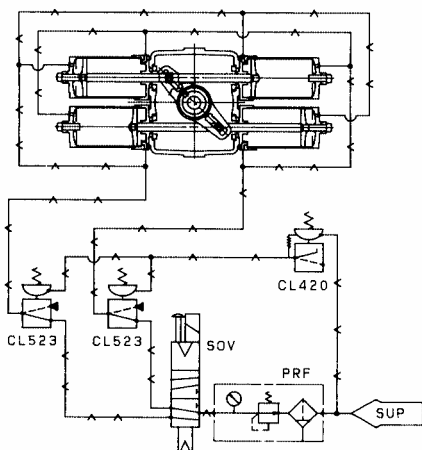
For air failure to counter-clockwise rotation, piping from VT is to be connected to CL523 on the left.

图 3-6 电磁阀 ON-OFF 控制：气源压力降低 保持原位

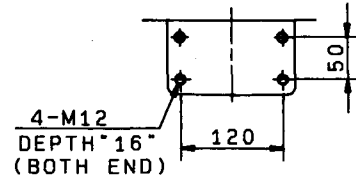
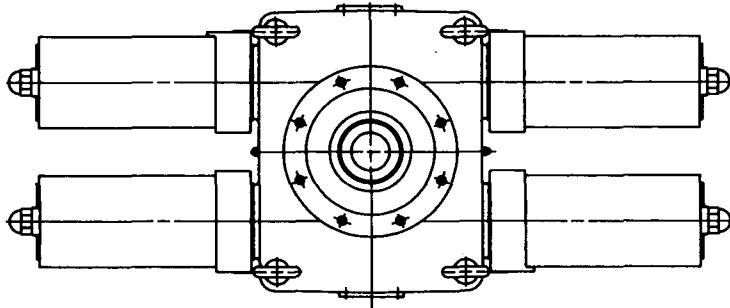
Fig. 3-6 ON-OFF CONTROL BY SOLENOID VALVE : AIR FAILURE AIR FAILURE POSITION LOCK

电磁阀励磁：输出轴向右回转

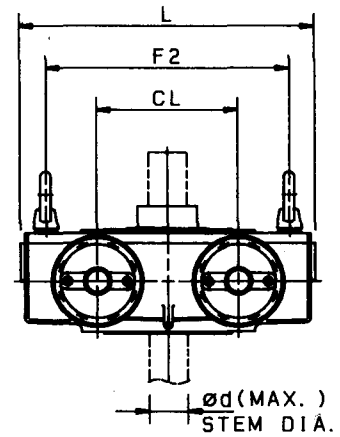
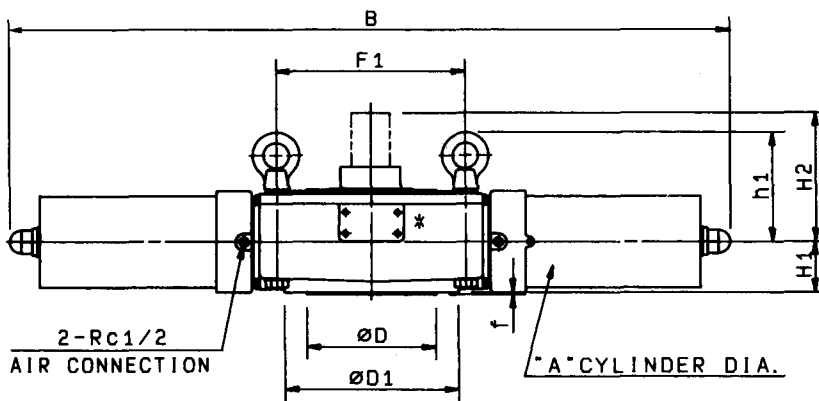
SOV ENERGIZED: CLOCKWISE DRIVE SHAFT ROTATION



PNEUMATIC CYLINDER ACTUATOR Double acting cylinder



DETAIL OF *



DIMENSIONS

UNIT: mm

SIZE CODE	A	B	L	F1	F2	CL	D	D1	f	d	H1	h1	H2	d1	M	K
□ 642ORB	200x4	1690	690	440	570	330	300	405	5	90	120	260	305	356	M20	30
□ 6428RB	280x4	1980	790	520	640	360	400	500	4	110	144	315	327	450	M24	36

NOTE:

DRAWING No.

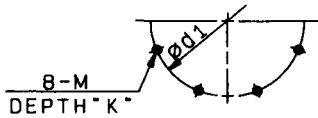
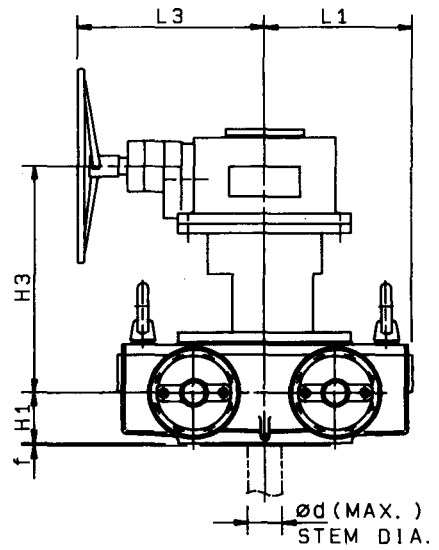
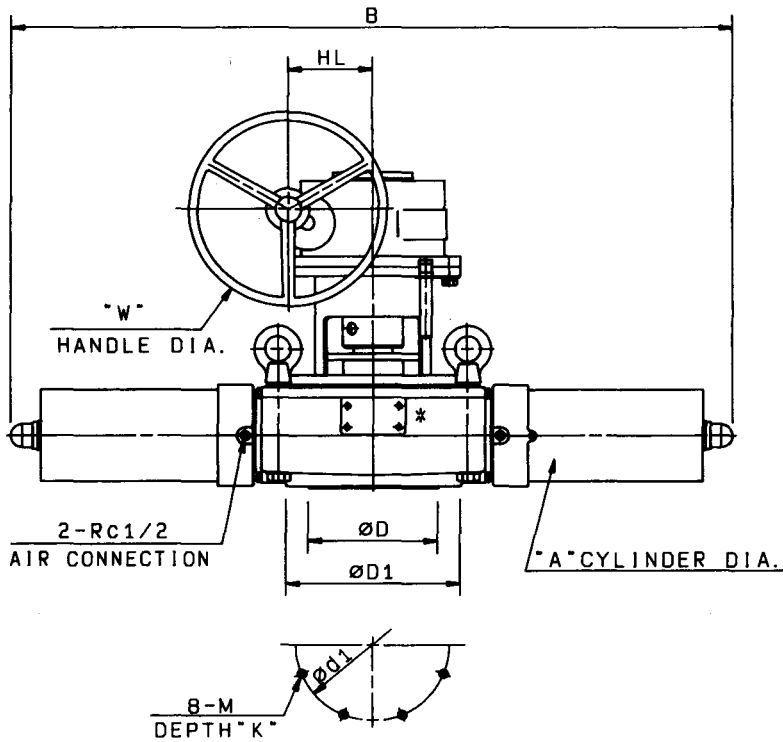
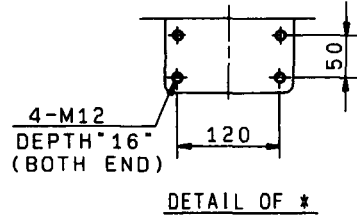
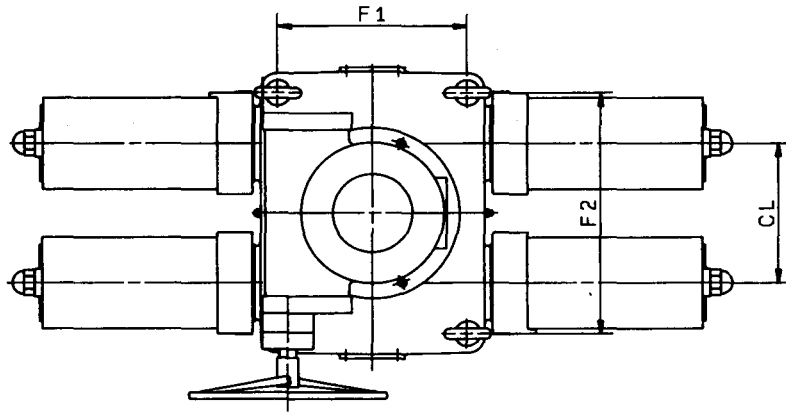
E-6400RB-W-N

REV

A

KOSO

PNEUMATIC CYLINDER ACTUATOR Double acting cylinder



DIMENSIONS

UNIT: mm

SIZE CODE	A	B	L1	L3	F1	F2	CL	D	D1	f	d	H1	H3	d1	M	K	HL	M
□ 6420RB	200x4	1690	345	440	440	570	330	300	405	5	90	120	536	356	M20	30	196	460
□ 6428RB	280x4	1980	395	523	520	640	360	400	500	4	110	144	572	450	M24	36	118	460

NOTE:

DRAWING No.

E-6400RB-W-H

REV

A

KOSO