

KITZ驱动装置

KITZ Actuator Series

KELMO[®] EX 系列 [KELMO EX SERIES[®]]

用于球阀和蝶阀的电动执行机构

[Electric Actuators for Ball and Butterfly Valves]

通用零部件的采用和模块化使得EXH系列和EXS系列具有显著的优势：

The modularization and the adoption of common parts have brought significant advantage to EXS and EXH series, such as:

■ **更好的性能价格比** [Better Cost Performance]

和其他同类产品相比，EXH系列和EXS系列在规格和性能上遥遥领先。

[Compared with other equivalent actuators, EXS and EXH are superior in specification and performance.]

■ **灵活的适配性** [Instant Option Availability]

EXH系列和EXS系列应用广泛，只需通过替换模块部件和更换扩充电路板就可快速配置。

[EXS and EXH can be used for various applications just by instant replacement of the modules of parts and exchangeable extension circuit boards.]

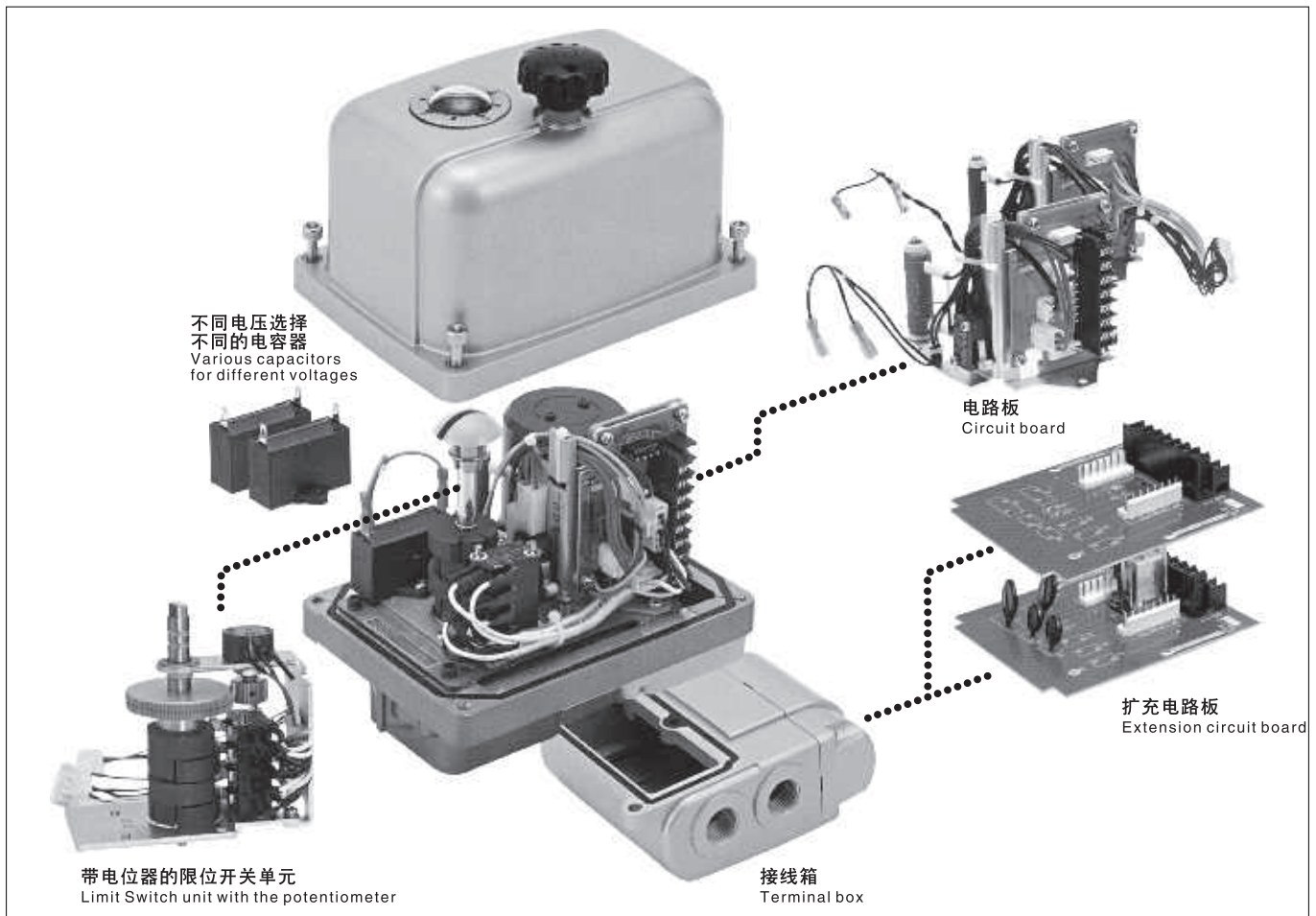
■ **易操作性** [Easiness]

除了模块和采用通用零部件外，高可视度位置指示器和手动操作柄更易进行快速维护。

[In addition to modulation and adoption of common parts, the highly visible position indicator and manual handle also contribute to speedy maintenance.]



通用零部件的采用和部件模块化便于灵活多变，使执行机构适合更广泛的应用
 The adoption of common parts and part modularization have enabled flexible modification, which will widen the applications of the actuator.



可供选择的规格 [Optional specification]

供电电压 [Power supply]

EXH EXS

AC110V 50/60Hz

AC115V 50/60Hz

AC120V 60Hz

AC220V 50/60Hz

AC230V 50/60Hz

AC240V 50/60Hz

AC115V 50Hz, AC120V 60Hz, AC230V 60Hz, AC240V

频率为50Hz时，允许供电电压波动范围为-10%~+5%。
 [Allowable fluctuation of supply voltage is limited within between minus 10% and plus 5% for 50Hz]

继电器 [Relays]

EXH EXS

继电器可以通过扩充电路板安装在驱动器内
 [Relays (on/off by a-contact) can be provided in the actuator by using extension circuit boards]

限位开关规格 [Limit switch specification]

EXH EXS

微负载接点(微弱电流)

两个标准限位开关可由选配的微负载(微弱电流)限位开关代替。
 [Contact for Micro load (Minute electrical current)]
 [Two standard limit switches can be replaced by optional limit switches for micro load (minute electrical current)]

电位器输出 [Potentio-meter output]

EXH EXS

135欧姆(线绕式) [135Ω Coil type]

500欧姆(线绕式) [135Ω Coil type]

阀门开启的角度以电阻值的大小来表示。

[The valve opening degree is indicated by resistance value.]

辅助限位开关规格 [Auxiliary limit switch specification]

EXH EXS

可另外添加两个限位开关 [Two more additional limit switches can be added.]

可提供用于微负载的开关 [Switches for micro load application are also available.]

包括四个标准限位开关在内，总共可以用六个限位开关(用电位器时，最多可以用4个限位开关)。

[Including four standard limit switches, total six switches can be used. (In case the potentiometer is used, four limit switches in total can be used at maximum.)]

接线箱 [Terminal box]

EXH

G^{1/2} 两个导线管接口 [G^{1/2} two conduit ports]

G^{3/4} 一个导线管接口 [G^{3/4} one conduit port]

NPT^{1/2} 两个导线管接口 [NPT^{1/2} two conduit ports]

NPT^{3/4} 一个导线管接口 [NPT^{3/4} one conduit port]

M20 一个导线管接口 [M20 two conduit ports]

标准配置带有两个G^{1/2}导线管接口的接线箱，适用于EXS系列
 [Terminal box with two G^{1/2} conduit ports is equipped as standard for EXS type.]

对于EXH系列，接线箱的作用是不用打开顶盖就可以连接电缆和使用选配的线路板扩展执行机构功能。
 [For EXH type, the use of the terminal box will enable the actuator to connect cables without removing the cover and to extend the actuator functions by using optional circuit boards.]

导线管接口 [Conduit port]

EXH EXS

G^{3/4}, NPT^{1/2}, NPT^{3/4}, M20

规格参数 [Specification]

用于球阀的快速型 (High-speed type For ball valve) 用于蝶阀和球阀的标准型 (Standard-speed type For butterfly valve and ball valve)	EXH100/200-1	EXH100/200-2	EXH100/200-3	EXH100/200-4
	EXS100/200-2	EXS100/200-3	EXS100/200-4	
供电电压 [Power Supply]	100/200V AC ±10% 50/60Hz			
输出扭矩 [Output Torque] (Nm)	9.8	49	196	588
额定电流 [Rated Current] (A)	100V AC: 0.65 200V AC: 0.35	0.65 0.35	1.2 0.6	2.8 1.5
马达类型 [Motor Type]	可反向旋转 [Reversible]			
马达输出 [Motor Output] (W) (Rating)	16	16	31	85
旋转方向 ² [Rotating Direction] ²	顺时针旋转关闭阀门, 逆时针旋转开启阀门 [Turning clock wise to close and counterclockwise to open valves]			
负载系数 [Duty Factor] [%ED]	30	30	30	30
阀门关闭时间 [SEC] ³ [Valve Closing Time]	EXH 50Hz: 9 EXH 60Hz: 8 EXS 50Hz: - EXS 60Hz: -	14 12 25 21	21 17 35 30	28 23 49 41
加热器功率 [Space Heater Volume [W]]	100V AC: 10 200V AC: 15	10 15	10 15	20 20
限位开关 ⁴ [Position Limit Switch] ⁴	提供两只带电压触点和两只不带电压触点的限位开关 [Two switches with voltage and two without voltage supplied]			
电压开关触点 [Switch Contact Voltage]	250V AC 11AC 11A最小电阻 [250V AC 11A least resistance load]			
绝缘保护 [Insulation Class]	JIS Class E,强度: 1500vAC 1分钟, 或1800v1秒, 电阻: 500V DC时最小100欧姆。 [JIS Class E, Strength:1500V AC 1min. Or 1800V 1sec., Resistance:100Ω minimum at 500V Dc]			
过载保护 [Overload Protection]	过热保护 [Thermal protection]			
工作环境 [Service Environment]	室内/室外(禁止水下使用, 避免阳光直射): [Indoor/ Outdoor (Submergence and direct sunlight must be avoided.)]			
防水, 防尘 [Water, Dust-Proof]	相当于IP-67 [Equivalent to IP-67]			
环境温度 [Ambient Temperature]	-10°C ~ +50°C			
导线管接口 [Conduit Port]	EXH: One G ¹ / ₂ EXS: Two G ¹ / ₂			
安装位置 [Mounting Position]	从垂直位置到水平位置(不得朝下安装) [From Vertical position to Horizontal position (No downward position)]			
手动操作 [Manual Operation]	拉起手动扣作柄即可手动操作, 同时触动内置联营公司锁开关切断电源。如要恢复电动操作, 按下手动扣作柄即可。 [Pull up the manual override handle knob for manual operation, which will activate the built-in interlock switch to cut off power supply. For the restoration of electrical operation, push down the handle knob]			
机械限位器 [Mechanical Stopper]	EXH: 机械限位器安装在开启和关闭位置, 各有7个位置可供调节。 [Mechanical stoppers are equipped in open and closed position. The stoppers are adjustable by 7 degrees in the both positions]	EXS: 机械限位器, 在关闭位可调, 安装在开启和关闭位置。[Mechanical stoppers, which can be adjusted in the closed position, are equipped in open and closed position]		
开度指示器 [Position Indicator]	位于透明外罩下的开度指示器安装在执行机构外罩的顶端。[Position indicator, covered by transparent cover, is equipped on the top of the actuator cover]			
安装法兰 [Mounting Flange]	符合ISO5211标准 [In accordance with ISO5211]			

*1由于执行机构的启动时电流约是额定电流的十倍, 所以与执行机构相接的各接口容量应足够。
*2对三通阀, 请参照“操作手册”。
*3阀门关闭时间是在无负载, 未安装阀门时计算得来的。当装上阀门后, 关闭时间可能会延长10%。
*4如果负载电流小于50毫安, 请使用微负载限位开关(微弱电流)。
*1 As the actuator is subjected to approx. Tenfold rated current at startup, the contacts of electrical devices connected to the actuator must have enough capacity to handle this large electrical current.
*2 Refer to "Operation manual" for 3 way valves.
*3 Valve closing time is calculated based on an unloaded condition without the valve being mounted, The closing time will be 10% slower, when the valve is mounted.
*4 In case load current is 50mA or smaller, use limit switches for micro load (minute current).

产品代码 [Product Code]

EX 系列产品代码

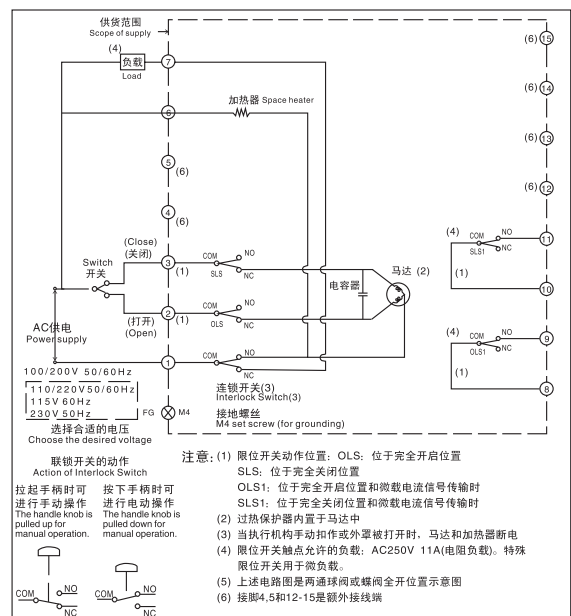
EX -

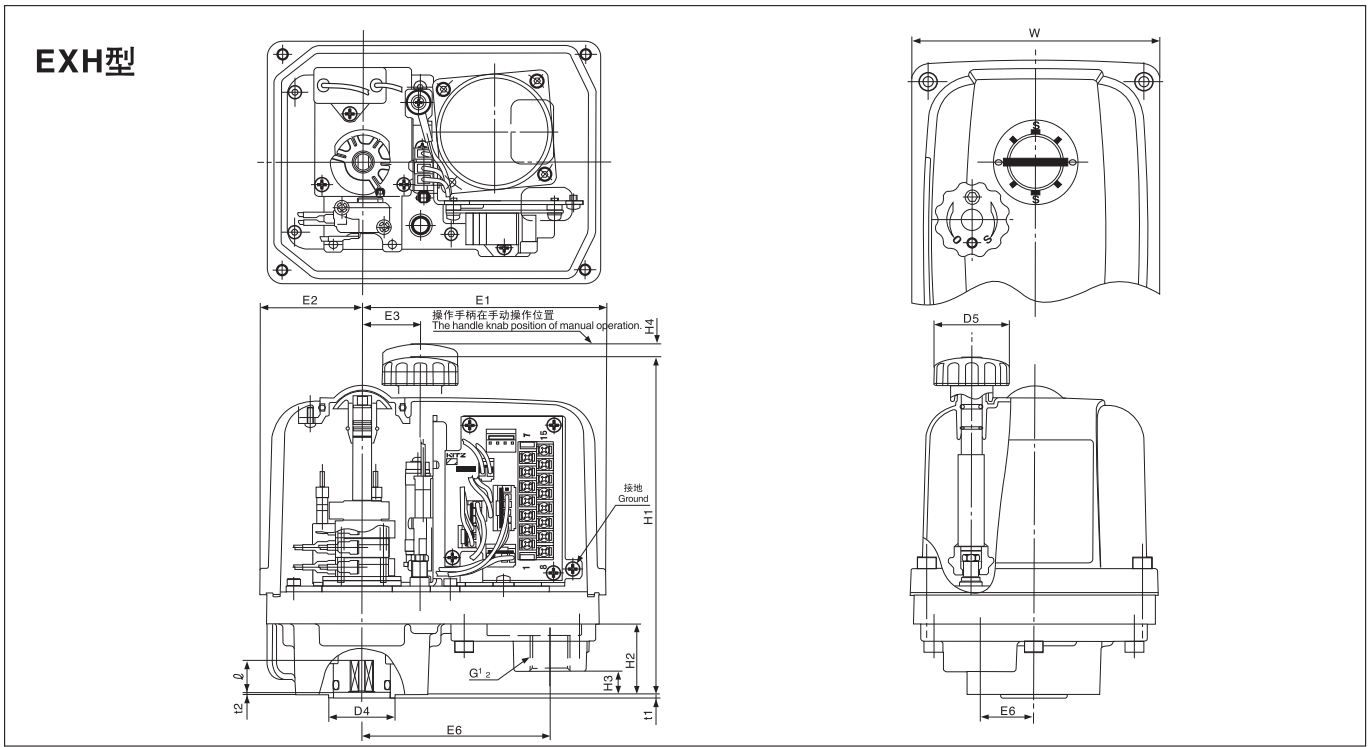
执行机构规格 Actuator size
EXS : 2·3·4 EXH : 1·2·3·4

供电电压 Power supply
100: AC100V
200: AC200V

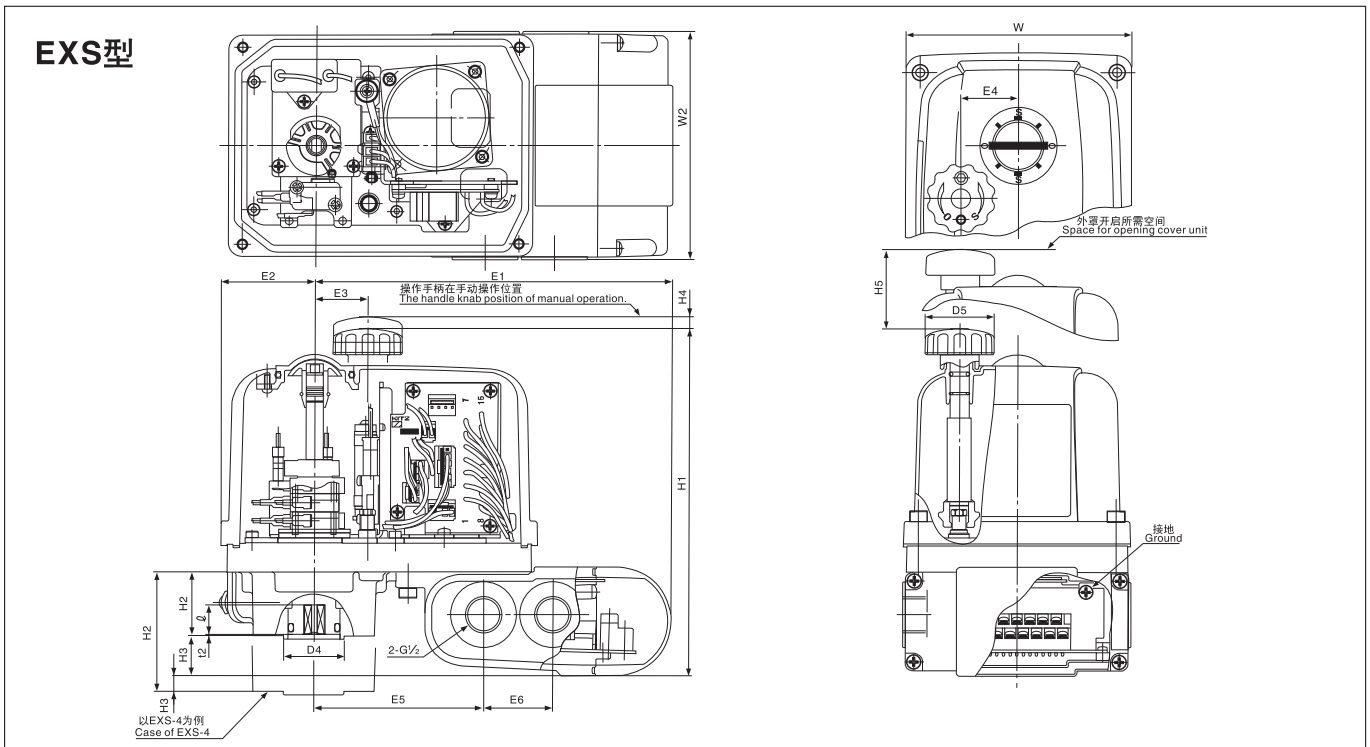
型号分类 Type
EXS: 标准执行机构, 适用于球阀和蝶阀
Standard speed actuator for ball valves and butterfly valves.
EXH: 快执行机构, 适用于球阀
High speed actuator for ball valves.

电路图 [Circuit Diagram]





型号 [Type]	E1	E2	E3	E4	E5	E6	W	H1	H2	H3	H4	H5	D1	D2	D3	D4	D5	ℓ	t1	t2
EXH100/200-1	129	54	30.4	33.5	99.5	28.5	131	178	37	12	7	107.5	50	70	—	35	40	16	2	1
EXH100/200-2	129	54	30.4	33.5	99.5	28.5	131	178	37	12	7	107.5	50	70	—	35	40	16	2	1
EXH100/200-3	152	69	45.1	42	123	28.5	158	203.5	44	19	7	117.5	50	70	102	55	60	25	2	1
EXH100/200-4	168	73	51.3	50	138.5	28.5	188	273	78	53	7	153	70	102	125	55	60	34	2	1



型号 [Type]	E1	E2	E3	E4	E5	E6	W1	W2	H1	H2	H3	H4	H5	D1	D2	D3	D4	D5	ℓ	t1	t2
EXH100/200-2	206.5	54	30.4	33.5	98	40	131	132	201	37	23	7	107.5	50	70	—	35	40	16	2	1
EXH100/200-3	230	69	45.1	42	121.5	40	158	132	219.5	44	16	7	117.5	50	70	102	55	60	25	2	1
EXH100/200-4	245.5	73	51.3	50	137	40	188	132	255	78	18	7	153	70	102	125	55	60	34	2	1

执行机构规格 [Actuator Sizing]

● 适用条件：球阀 [Sizing condition: Ball valve]

工作条件 [Service condition]	流体 [Fluid]	洁净流体 [Clean fluid]	高粘度流体 ²⁾ [Highly viscous fluid] ²⁾	是否有颗粒 ³⁾ [Foreign particles included] ³⁾
流体类型 [Fluid type]	水, 润滑剂 [Water, Lubricant]	标准规格 [Standard sizing]	◎	◎
	空气, 气体或蒸汽压力低于0.69MPa [Air, gas or steam, 0.69 Mpa or lower]	标准规格 [Standard sizing]	◎	◎
	溶剂 ¹⁾ [Solvents] ¹⁾	◎	◎	◎
	真空或禁油 [Vacuum or Oil free service]	◎	◎	◎
工作温度 [Service temperature]	工作温度取决于阀座材料 [Service temperature shall be limited by the seat material of the valve]			

* 请向KITZ咨询带有◎的执行机构规格。 * Contact KITZ for actuator sizing, where mark is indicated.
¹⁾ 溶剂包括: 煤油, 石脑油或酒精。 ¹⁾ Solvents, such as Kerosene, naphtha or alcohol.
²⁾ 粘度范围: 10000-50000cp。 ²⁾ Viscosity ranges from 10000 CP to 50000 CP.
³⁾ 包括粉末和泥浆。 ³⁾ Inclusion of powder and slurry.

● 适用条件：蝶阀 [Sizing condition: Butterfly valve]

流体类型 [Fluid type]	平稳流体(清水, 润滑剂等) [Smooth fluid (Clean water, lubricant, etc)]
流速(液体) [Velocity(Liquid)]	低于3米/秒 [3m/sec or slower]

* 下列情况下请联系KITZ: * Contact KITZ for advice when:
 工作条件不能达到上述要求。 · service conditions do not meet those specified above.
 阀门停止操作3个月以上。 · Valve operation is interrupted for more than 3 months.

类型/通径 [Type/Bore]	壳体材料 [Shell materials]	等级 [Class]	连接 [Connection]	产品代码 [Product code]	大小 [Size]																		
					mm	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300			
					inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12			
球阀/全通径 [Ball valve/Full Bore]	铸铁 [Cast Iron]	JIS 10K	螺纹连接 [Threaded]	10 FCT																			
			法兰连接 [Flanged]	10 FCTB															EXH-4	★			
				10 STBF																	★		
	不锈钢 [Stainless Steel]	JIS 10K Class150 JIS 20K Class 300	法兰连接 [Flanged]	10 UT																			
				10 UTB · 150UTB																	★		
			20 UTB · 300UTB																		★		
碳钢 [Carbon Steel]	JIS 10K Class150 JIS 20K Class 300	法兰连接 [Flanged]	10 SCTB · 150SCTB																				
			20 SCTB · 300SCTB																	★			
球阀/缩径 [Ball valve/Reduced Port]	不锈钢 [Stainless Steel]	JIS 10K Class150 JIS 20K Class 300	法兰连接 [Flanged]	150 UTR																	★		
				300 UTR																		★	
	碳钢 [Carbon Steel]	JIS 10K Class150 JIS 20K Class 300		150 SCTR																		★	
				300 SCTR																			★
三通球阀/全通径 [Ball valve/ Full Bore 3way]	不锈钢 [Stainless Steel]	JIS 10K	法兰连接 [Flanged]	10 TUR4T(L)A					EXH-2	EXH-3	EXH-4												
				10 UTRLN				EXH-1	EXH-2	EXH-3													
蝶阀 [Butterfly Valve]	铝 [Aluminum]	JIS 10K	对夹 [Wafer]	10 XJME																			
				10 XJSME																			
	球墨铸铁 [Ductile Iron]	JIS 16K BS PN16		10 DJ																			
				16 DJ, PN16DJ																			
	不锈钢 [Stainless Steel]	JIS 10K JIS 16K		10 UB																			
				16 UB																			

● 最大压差: 0.49MPa * Max differential pressure: 0.49MPa
 (*1) 当执行机构用于三通阀时, 由于受流向影响, 请向KITZ咨询。 (*1) Consult KITZ, when the actuator is mounted on 3-way ball valves, The pattern of flow directional form is limited.
 (*2) 当执行机构用于手动阀时, 需要特制的安装件, 请向KITZ咨询。 (*2) Consult KITZ, when the actuator is mounted on manual operation valves, Special parts are needed to mount the actuator.

法兰规格 [Dimensions of flange]

执行机构 [Actuator]	ISO法兰 [ISO Flange]	凸面直径 [Diameter of raised face]	轴面长度 [Axis side length]	轴深度 [Axis depth]
EXH-1	—	F05+F07	35	16
EXH-2	EXS-2	F05+F07	35	16
EXH-3	EXS-2	F05+F07+F10	55	25
EXH-4	EXS-4	F05+F07+F12	55	34