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阀门电动装置

Valve Electric Actuators

QBR Quarter-turn

QBR 型部分回转



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QBR 型部分回转阀门电动装置是我公司在 QB 型基础上最新研制的换代型产品。适用于控制中型蝶阀，球阀等做90° 回转的阀门。该产品体积小，重量轻，具有高效率，高可靠性，高防护性能及多种控制形式等特点。可现场电动或手动操作，也可远距离多种控制形式控制，可广泛用于石油，化工，冶金，电厂，水处理等行业。

可生产基本型，整体型，防爆型，防爆整体型及整体调节型等，该产品基本防护等级为 IP67，防爆等级Exd II BT4Gb。

按电气控制原理可组成：

- a. 基本型：带现场操作旋钮。可选为计算机提供的行程。力矩无源接点，输出 4~20mA 阀位信号。
- b. 整体型：带电器元件和现场操作旋钮及现场-远控选择旋钮。可选为计算机提供的行程。力矩无源接点，现场-远控工作状态无源接点，输出 4~20mA 阀位信号。鉴断相及自动换相保护装置等。
- c. 整体调节型：带电器元件，调节板元件和现场操作旋钮及现场-远控选择旋钮。可选为计算机提供的行程。力矩无源接点，现场-远控工作状态无源接点。鉴断相及自动换相保护装置等。

As an alternation product of generation, the model QBR quarter-turn valve electric actuators are newly developed by the model QB of our company. These actuators are suitable for use on butterfly valve, ball valve and check valve etc. which are required to turn 90°. These actuators are featured by small size, light weight, high efficiency, high reliability, high protection capability, low noise and so on. Both operation at site and remote controlling can be carried out. So they have been applied in petroleum and chemical industries, power generating plant, water treatment and paper-making industries.

We can produce the basic model, integral model, explosion proof model, integral explosion proof model and integral adjustable model, etc. The basic level of protection and the level of explosion proof of the products are respectively IP67 and Exd II BT4Gb.

According to the theory of electric control, the following models can be formed:

- a. Basic model: provided with on-site operation switch; course supplied by computer is optional; moment passive contact; output of 4~20mA valve location signal.
- b. Integral model: provided with electric elements, on-site operation switch and field-remote control switch; course supplied by computer is optional; moment passive contact; field-remote controlled circulation state passive contact; output of 4~20mA valve location signal; open phase discrimination and protection device, etc.
- c. Integral adjustable model: provided with electric elements, adjusting plate elements, on-site operation switch and field-remote control switch; course supplied by computer is optional; moment passive contact; field-remote controlled circulation state passive contact; open phase discrimination and protection device, etc.

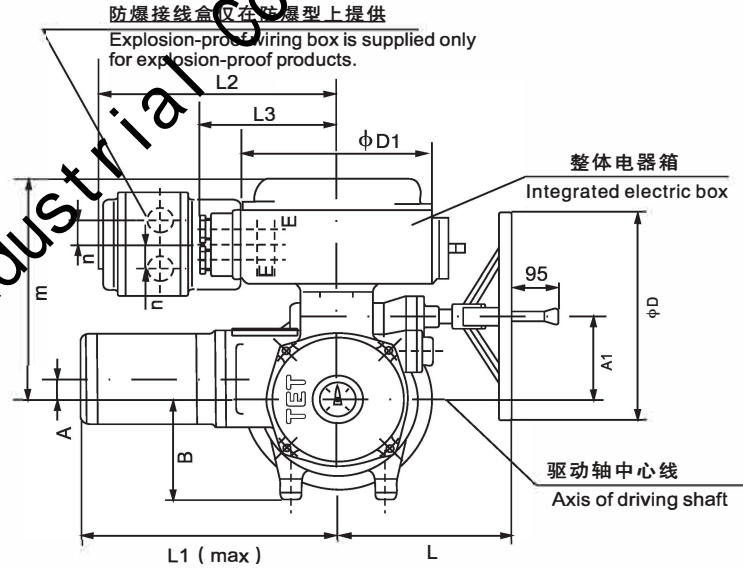
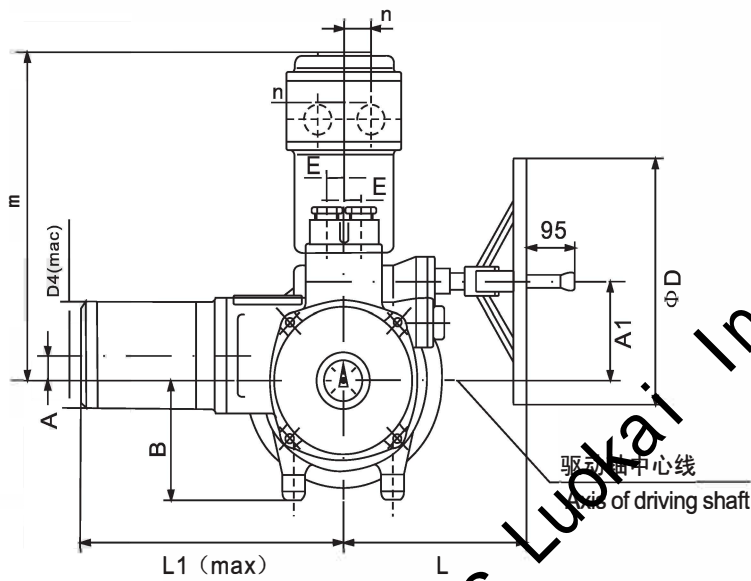
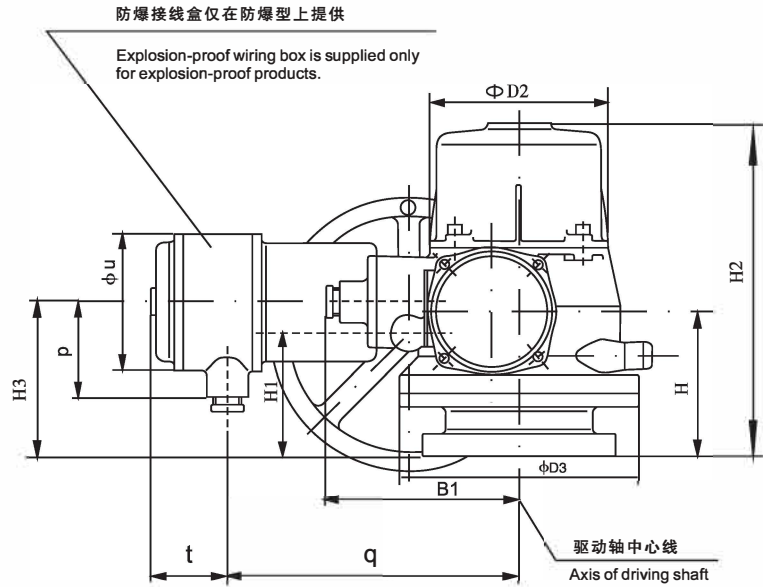
QBR3~QBR5 型技术参数

Technical parameters of Model QBR3~QBR5 product

项目 Item 型号 Type	规格 Model	输出 转矩 Torque (N.m)	输出 转速 Speed (r/min)	电机 功率 Motor (KW)	电机电流		90° 运 行 时间 Time (s)	整机自 锁性 Worm lock	参考重量 (基本型) Weight (Kg)
					Current of Motor (A)				
					额定 Rated	堵转 Locked Rotor			
QBR3 QBR3.IN QBR3Ex QBR3 Ex.IN	QB90-0.5	900	0.5	0.25	1.3	5.3	30	自锁	70
	QB90-1		1	0.25	1.3	5.3	15		
	QB90-2		2	0.37	1.6	7.0	7.5	不自锁	
	QB120-0.5	2000	0.5	0.25	1.3	5.3	30	自锁	
	QB120-1		1	0.37	1.6	7.0	15		
	QB120-2		2	0.55	2.5	8.8	7.5	不自锁	
	QB200-0.5		0.5	0.37	1.6	7.0	30	自锁	
	QB200-1	1	0.55	2.5	8.8	15			
	QB200-2	2	1.1	3.4	17	7.5	不自锁		
	QB250-0.5	2500	0.5	0.37	1.6	7.0	30	自锁	
	QB250-1		1	0.55	2.5	8.8	15		
QB250-2	2		1.1	3.4	17	7.5	不自锁		
QBR4 QBR4.IN QBR4Ex QBR4 Ex.IN	QB400-0.25	4000	0.25	0.37	1.6	7.0	60	自锁	120
	QB400-0.5		0.5	0.55	2.5	8.8	30		
	QB400-1		1	0.75	3	15.6	15		
	QB500-0.25	5000	0.25	0.55	2.5	8.8	60		
	QB500-0.5		0.5	0.75	3	15.6	30		
	QB500-1		1	1.1	3.4	17	15		
	QB600-0.25		6000	0.25	0.55	2.5	8.8		
QB600-0.5	0.5	1.1		3.4	17	30			
QBR5 QBR5.IN QBR5Ex QBR5 Ex.IN	QB800-0.25	8000	0.25	1.1	3.4	17	60	自锁	210
	QB800-0.5		0.5	1.5	3.7	18	30		
	QB800-1		1	2.2	5.2	30	15	不自锁	
	QB1000-0.25	10000	0.25	1.5	3.7	18	60	自锁	
	QB1000-0.5		0.5	2.2	5.2	30	30		
	QB1000-1		1	3.0	6.8	35.7	15	不自锁	
	QB1200-0.25	12000	0.25	2.2	5.2	30	60	自锁	
QB1200-0.5	0.5		3.0	6.8	35.7	30			

- 说明: 1. 额定电压下, 电机堵转电流与额定电流容差为保证值的+20%。
 2. 产品为防爆型时, 整机重量增加5Kg。
 3. 产品为防爆整体型时, 整机重量增加15Kg。
 4. 产品为普通整体型时, 整机重量增加8Kg。

Description: 1. Under rated voltage, guarantee value of the ratio of motor blocking current to rated current is, its tolerance is +20% of the guarantee value.
 2. For explosion-proof products, total weight may be increased by 5Kg.
 3. For explosion-proof integral, total weight may be increased by 15Kg.
 4. For integral products, total weight may be increased by 8Kg.



注：（1）产品为防爆型时，H2尺寸均增加20mm。

（2）两电缆进线密封机构推荐使用Φ17控制电缆和Φ11电源电缆。

（防爆型产品的进线结构和使用方法详见产品使用说明）

Note: (1) For explosion-proof products, add 20 mm to size H2.

(2) For two cable inlet sealing structures, it is recommended to use Φ 17 control cable and Φ 11 power source cable.

(For inlet structure of explosion-proof products, see product operation manual).

QBR3 (QBR3Ex) ~QBR5 (QBR5Ex)外形尺寸表

Overall dimensions of QBR3(QBR3Ex)~QBR5(QBR5Ex)

型号 Type	代号 Code	A	A1	B	B1	φ D	φ D2	φ D3	φ D4 (max)	E	H
QBR3 (QBR3Ex)		20	113	160	195	308	212	265	150		154
QBR4 (QBR4Ex)		37	134	180	225	457	246	315	170	21	204
QBR5 (QBR5Ex)		38	164	215	245	457	284	408	185		248

型号 Type	代号 Code	H1	H2	H3	L	L1 (max)	以下为防爆型增加外形尺寸 The following is additive overall dimensions of explosion-proof products						
							m	n	p	q	t	φ u	
QBR3 (QBR3Ex)		123	370	156	250	450	334				273		
QBR4 (QBR4Ex)		163	440	219	264	510	365	25	100		302	63	142
QBR5 (QBR5Ex)		203	520	280	391	710	385				322		

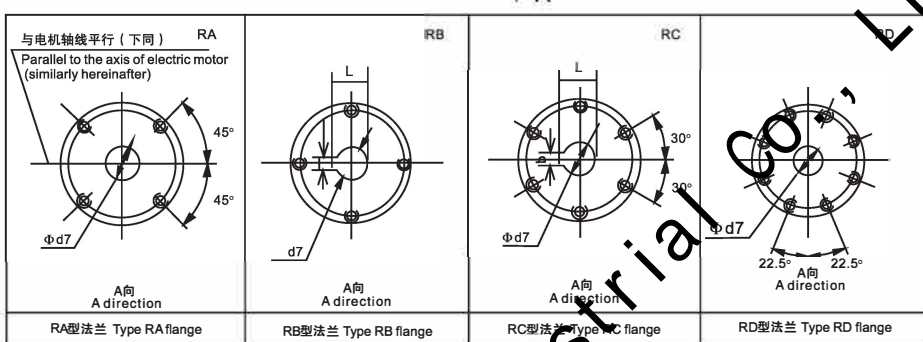
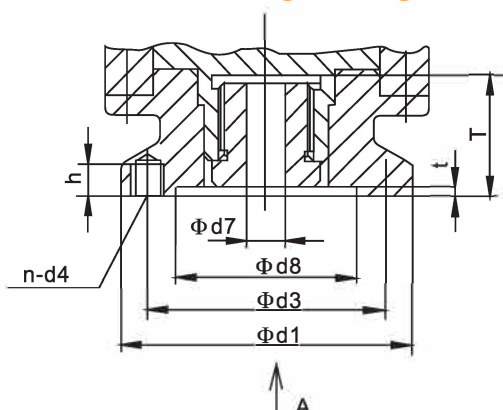
QBR3 IN (QBR3ExIN) ~QBR5 IN (QBR5ExIN)增加 外形尺寸表

Additory Overall dimensions of QBR3IN(QBR3ExIN)~(QBR2ExIN)

型号 Type	代号 Code	φ D1	L2	L3	m 普通整体 Common Integral	m 防爆整体 Explosion-proof Integral	n	E	T
QBR3IN QBR3Ex.IN					313	341			
QBR4 QBR4Ex.IN		240	306	200	343	371	25	21	63
QBR5 QBR5Ex.IN					363	393			

QBR3~QBR5法兰结构、型式及尺寸表

Table of structure, type and dimensions of QBR3~QBR5 flange



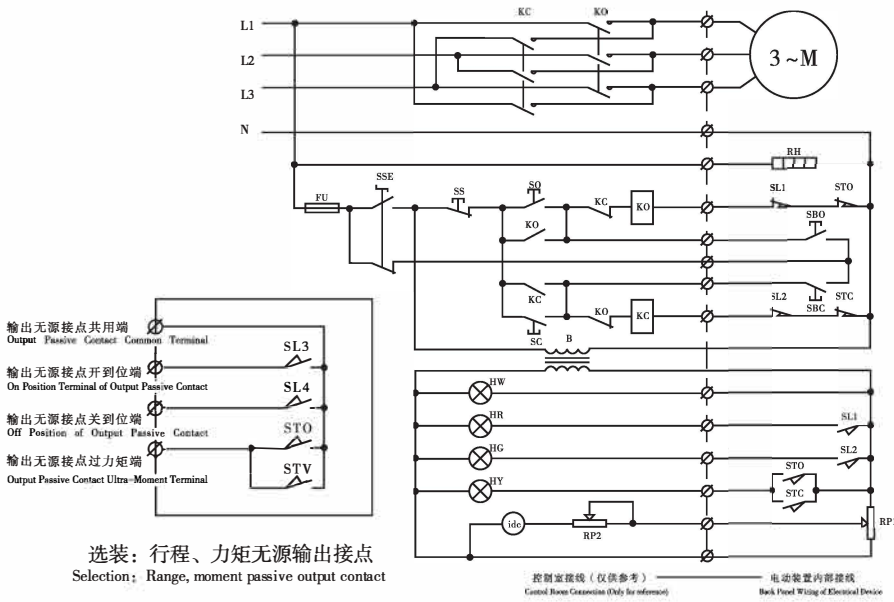
型号	法兰型式 Flange type	法兰口径 或法兰号 Flange bore and flange code	Φd1	Φd3	标准尺寸 Standard dimensions	预留尺寸 Preliminary dimensions	最大允许 Max Permissible	b	L	n-d4	Φd8	T	t	h				
QBR3	RA	F14	170	140	—	20	50	10	36.45	4-M16	110	67	7	25				
		F16	210	165	—										4-M20			
	RB	16"	—	—	33.15					215					158.75	41.3	44.45	4-M18
		18"	—	—	38.00													
		—	—	—	41.15													
		—	—	—	—													
RC	Q60	170	140	—	6-M10	110												
	Q120	215	165	—	6-M16	135												
QBR4	RD	F16	210	165	—	30	70	16	54.65	4-M20	135F9	79	6	30				
		F25	300	254	—					8-M16								
	RB	24"	276	215.9	50.65					4-M20								
	RC	Q120	215	165	36H12					花键 7D9					42H7	6-M16	135F9	79
	RD	Q500	300	254	55H8					对键 16					62.2 ^{±0.05}	8-M16	200F9	98
QBR5	RD	F25	300	254	—	50	105	16	63	8-M16	200F9	116	6	30				
		F30	350	298	—					8-M20								
		28"	300	254	55					8-M16								
		Q500	—	—	—					8-M16								

QBR 型部分回转阀门电动装置

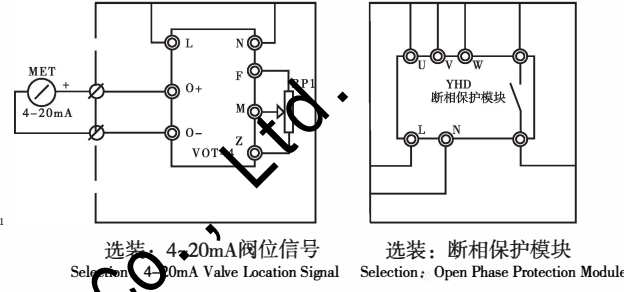
Model QBR Quarter-turn Valve Electric Actuators

QBR系列基本型电气原理图 (AC380V)

QBR Series Basic Mode Electronic Schematic (AC380V)

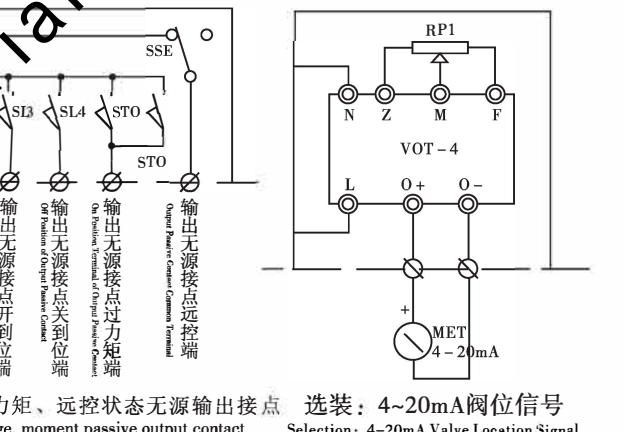
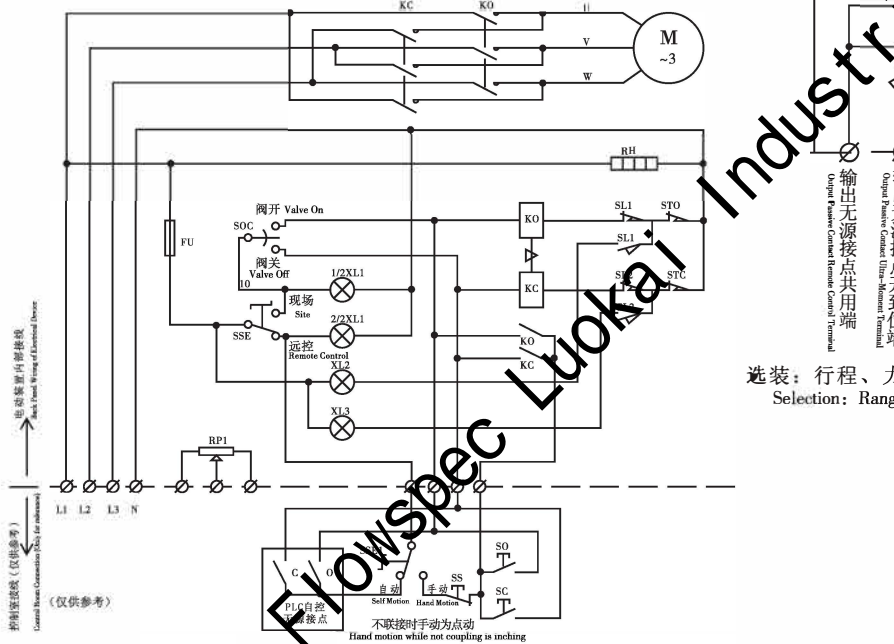


元 件 表 Component List			
7	SBO	现场手动开阀按钮	Site Hand Operated Valve Open Knob
6	SBC	现场手动关阀按钮	Site Hand Operated Valve Close Knob
5	RP1	位置反馈电位器	Position Feedback Potential Knob
4	STO-STC	开、关向力矩限位开关	Moment Limit Switch
3	SL1-SL4	开、关向行程限位开关	Lead Limit Switch
2	RH	空间加热器	Space Heater
1	M	阀门专用电机 (AC380V)	Special Machine of Valve (AC380V)
序号 No.	标号 Label	名称 Name	
			在电动装置上 On electric device



QBR系列整体型电气原理图 (AC380V)

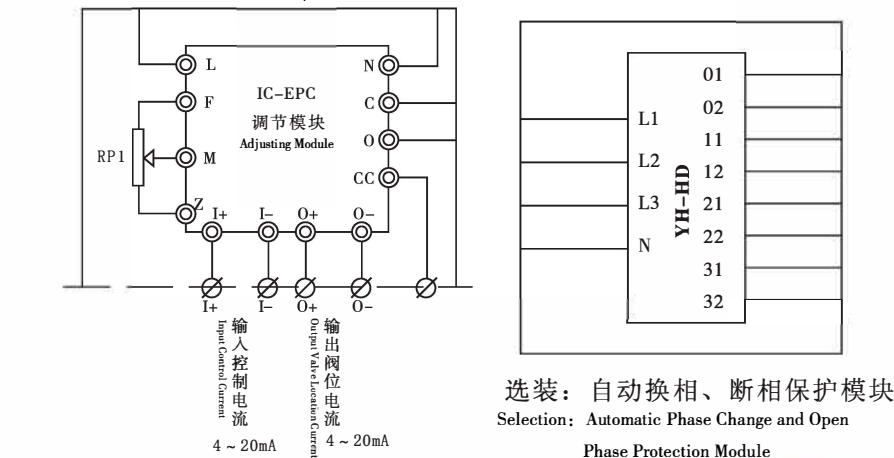
QBR Series Integration Mode Electronic Schematic (AC380V)



注解:

Note:

- 1、本图表示电动阀门处于中间位置。
- 1、The schematic shows that the electric valve is in mid position.
- 2、∅：用户接线端子。⊙：内部接线端子。
- 2、∅:Connecting Terminal ⊙: Internal Connecting Terminal
- 3、元件表中“@”为选装件
- 3、The “@” in Component List represents selecting element



元 件 表 Component List			
17			
16			
15	@IC-EPC	调节模块	Adjusting Module
14	@YHJD	鉴相、断相保护模块	Phase Discrimination and Open Phase Protection Module
13	@VOT-4	4线阀位电流发生器	Current Generator of 4-line Valve Location
12	@YH-HD	自动换相及断相保护模块	Automatic Phase Change and Open Phase Protection Module
11	RP1	位置反馈电位器	Position Feedback Potential Knob
10	XL2	阀开/阀关指示灯	Site/Remote Control Operative Indicator Light
9	XL1	现场/远控工作指示灯	Site Valve On-Off Button
8	SOC	现场开阀、关阀按钮	Site/Remote Control Operative Changeover Knob
7	SSE	现场/远控工作转换按钮	Power Supply Insurance
6	FU	电源保险	Moment Limit Switch
5	STO-STC	开、关向力矩限位开关	Lead Limit Switch
4	SL1-SL4	开、关向行程限位开关	Space Heater
3	RH	空间加热器	AC Contactor
2	KM1、KM2	交流接触器	
1	M	阀门专用电机 (AC380V)	Special Machine of Valve (AC380V)
序号 No.	标号 Label	名称 Name	
			在电动装置上 On electric device

★ ★ 订 货 须 知 ★ ★

用户订货请说明如下内容：

- 阀门所需转矩(N·m)，转速(r/min)
- 阀杆直径(mm)
- 与阀门连接尺寸、形式
- 产品使用环境
- 电气控制要求
- 是否需要控制器
- 各种特殊要求

Information Required with Order

The following items shall be clear when ordering:

- Torque (N·m) and speed (r/min) needed by the valve.
- Valve stem diameter(mm).
- Connection dimension and mode with valve.
- Working conditions of our product.
- Requirement of electric control.
- Whether or not you require the controller.
- All the special requirements.

天津百利二通机械有限公司

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