

Function	Basic	Economic	Intelligent
Non-intrusive commissioning	—	●	●
Support open-Close duty and modulation duty	—	●	●
Support manual and electric control	●	●	●
Protection level: IP65~IP67 (optional: IP68)	●(○)	●(○)	●(○)
Special environment: coastal, cool temperature, submersible, explosion-proof	○	○	○
External terminals	●	●	●
External plug-pull terminals	○	○	○
Mechanical limit positioning and scale indication	●	—	○
Absolute encoder limit positioning	—	●	●
Mechanical torque limit protection	●	●	●
Electronic torque limit protection	—	—	●
Remote/Local control options	—	●	●
LCD status display	—	●	●
Chinese/English language options	—	—	●
Motor phase-loss protection	—	●	●
Motor overheating protection	●	●	●
Motor overload and short circuit protection	—	—	●
Electronic brake or modulation duty	—	—	●
Phase sequence self-identification	—	●	●
Over-voltage and under-voltage protection	—	—	●
Self-check, parameter recording and export	—	—	●
4 relay outputs	—	●	—
6 configurable relay outputs (optional: expandable 4 relay)	—	—	●(○)
4-20mA analog output corresponding valve percentage	○	●	●
Supports hand-held infrared intrinsically safe remote control	—	—	●
Split installing of control part	—	—	○
Valve percentage display without power	—	—	○
Fieldbus control (supports Modbus_RTU, Profibus_DP)	—	—	○
Remote control and data analysis in cloud platform	—	—	○
Note: "—" means no such function configuration, "○" means optional function configuration, and "●" means standard function configuration			

CASA

Main performance indexes of CASA actuator

Term	Parameter	
Main Power	Voltage	Standard:3-380VAC±10%; Options:3-220VAC ~660VAC
	Frequencies	Standard: 50Hz ±5%; Options: 60Hz ±5%
Ambient temperature	Standard : -20°C~+ 60 °C; Options : -45°C~+ 70°C	
Relative humidity	≤95%(25°C)	
Atmospheric pressure	86kPa ~ 106kPa	
Protection level	IP65、IP67、IP68	
Explosion-proof level	ExdIIBT4、ExdIICt4、Exd I Mb	
Motor Insulation level		
Motor working duty	Open-Close Duty: S2-15min Modulation Duty: S4-25%	
Starting frequency	Open-Close Duty : <360/h Modulation Duty: 300/h, 600/h, 1200/h	
Relay contact rating	3A 250VAC,3A 30VDC	
Discrete input isolation voltage	3750Vrms	
Modulation analog output	4-20mA DC24V	
Modulation analog output load	≤750Ω	
Modulation duty parameter	Analog input	4-20mA
	Sampling accuracy	0.1%
	Analog input mode	Optocoupler isolation
	Analog input isolation voltage	5000Vrms
	Dead zone	0.1%~10%
Max starting current	Less than 7 times the rated current instantly	
Air circuit breaker rated current	Not less than 5 times the actuator rated current	
Fieldbus	Please refer to the fieldbus technical manual	



Environment	Installation location	Protection level
Standard	Inside the building	IP 65
	Under the shelter	IP 67
	Outdoor	IP 67 + heater
Coastal	Port	P 67 + Marine corrosion protection
Submersible	Submerged for 72 h at a depth of 6m	IP 68 + heater
Cool temperature	Cool temperature to $\leq -40^{\circ}\text{C}$	IP 68 + heater



Explosion-proof

CNCA-C23-01

The mandatory CNCA-C23-01 standard (CCC mandatory certification of explosion-proof electrical products) specifically specifies the conditions that the equipment should meet when used in an explosion-hazardous environment;

CASA

CASA explosion-proof actuators meet the explosion-proof levels listed in the table

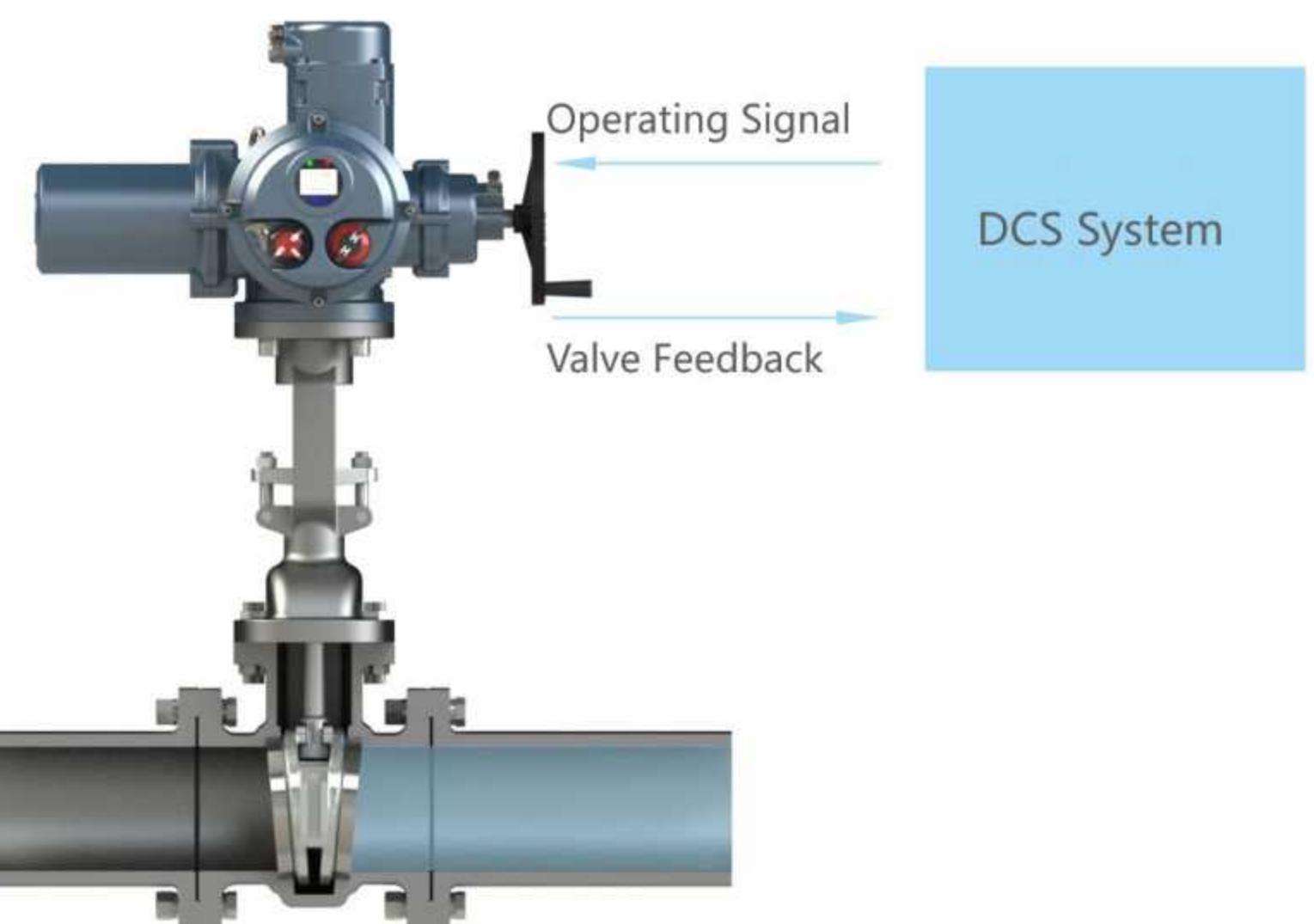
Ex-proof sign	Category	GAS	Protection Level
Ex d II B T4	Electrical equipment for all explosive gas environments except underground coal mines	Ethylene	IP 67
Ex d II C T4		Hydrogen	
Ex d I Mb	Electrical equipment in coal mine	Methane	



Open-close duty

Sending one or more input control signals into a system and influences the system. And characteristics of this control are open-loop. Input command is not controlled by the changing flow of the valve.

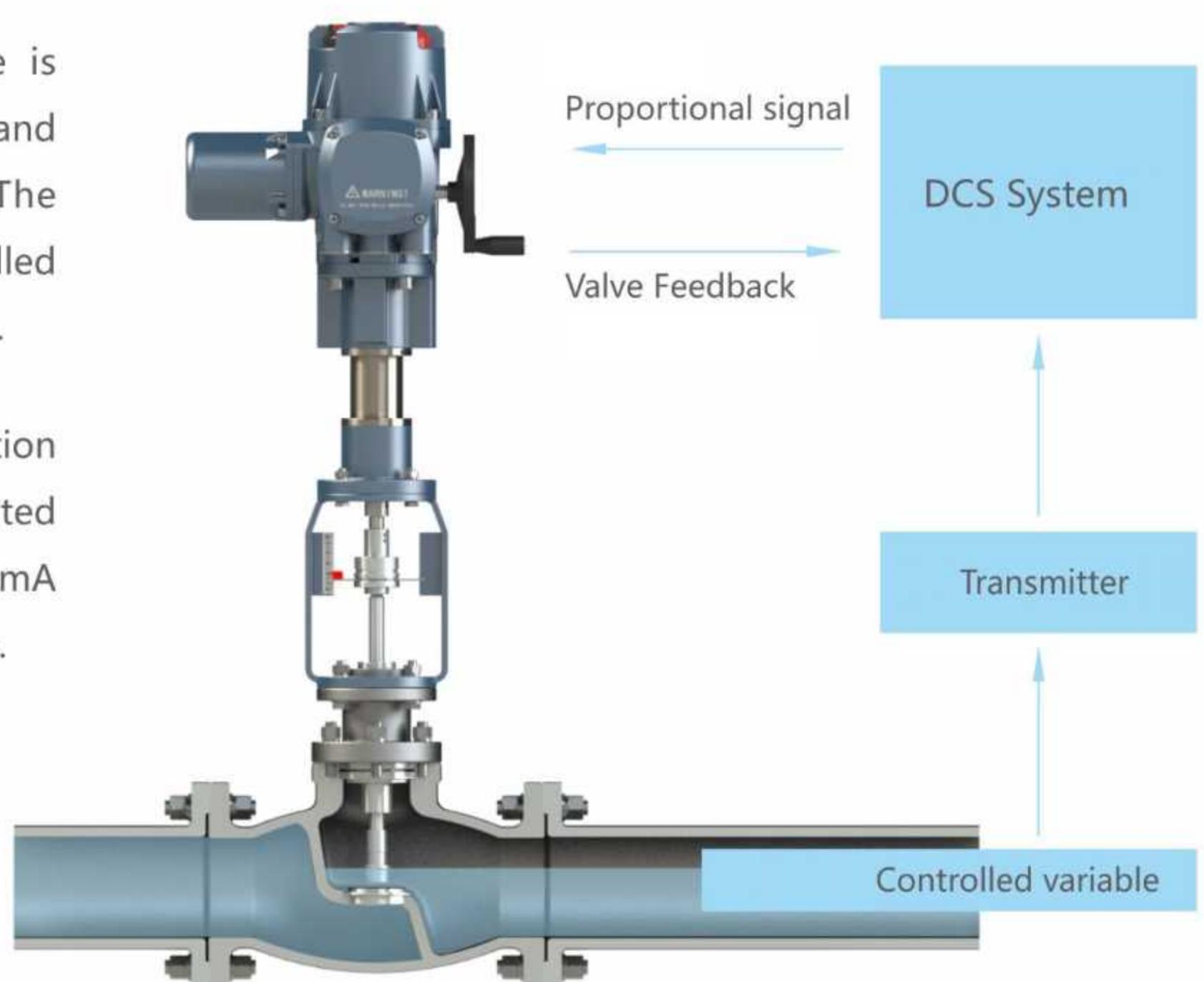
CASA open-close duty actuator can be used for isolation duties of up to 360 starts per hour. Motor working duty is S2 short-time. It can support accept discontinuity signal from control system and provide relay feedback of position.



Modulation duty

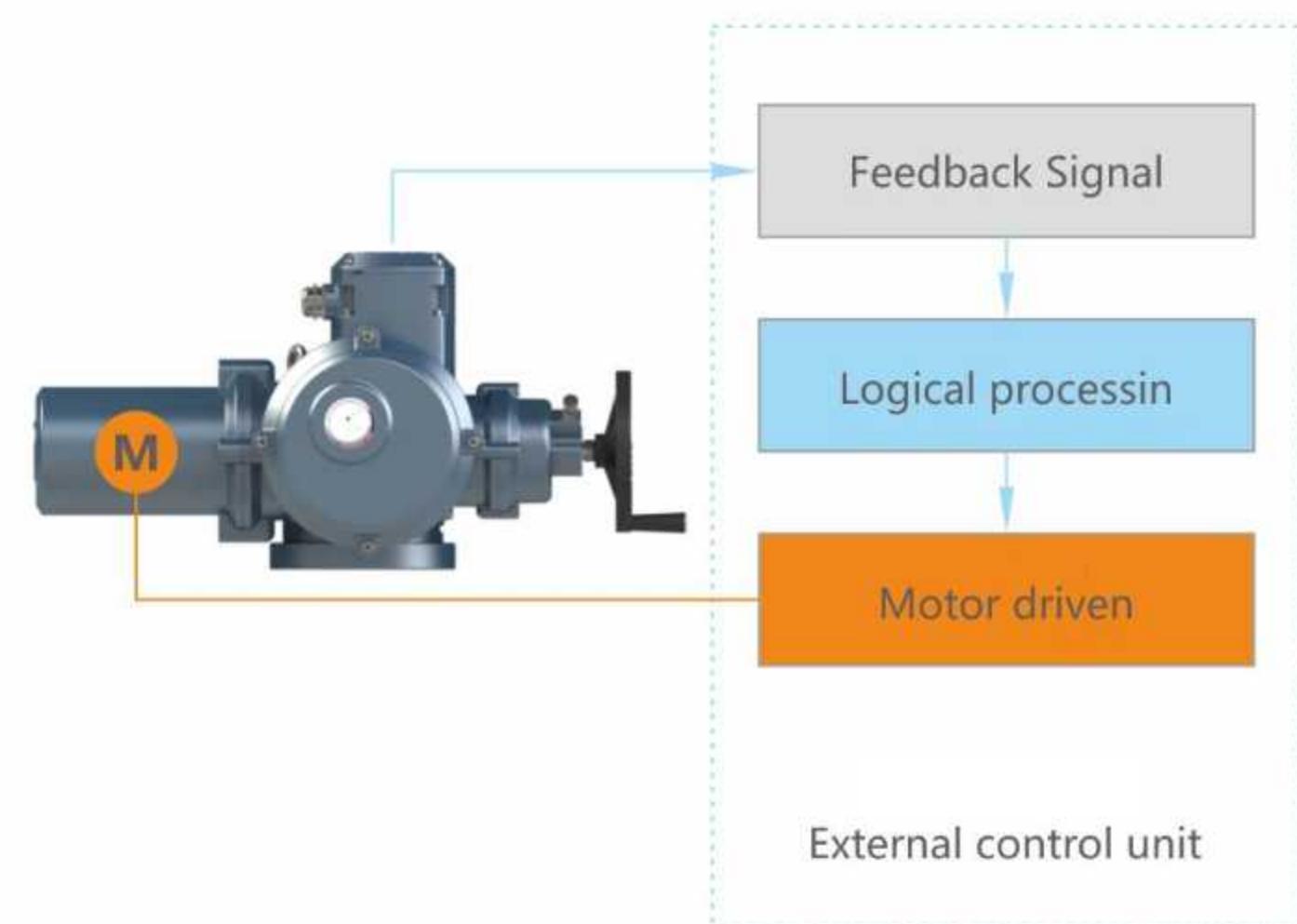
During the control process, the controlled variable is continuously monitored and compared with the command signal in order to maintain the expected value. The characteristic of control is closed loop. And the controlled variable continuously affects the input control instruction.

JLSCT-A modulation duty actuator can be used for isolation duties of up to 1200 starts per hour under the 25% rated load. Motor working duty is S4. It can support accept 4-20mA signal from control system and provide 4-20mA feedback.



Basic

The electrical and logic control unit is provided externally. The start of motor and the feedback signal from sensors (position limit, torque limit, overheating) must be handled by an external control unit. CASA can provide users with standard control unit, or special control unit according to user requirements.

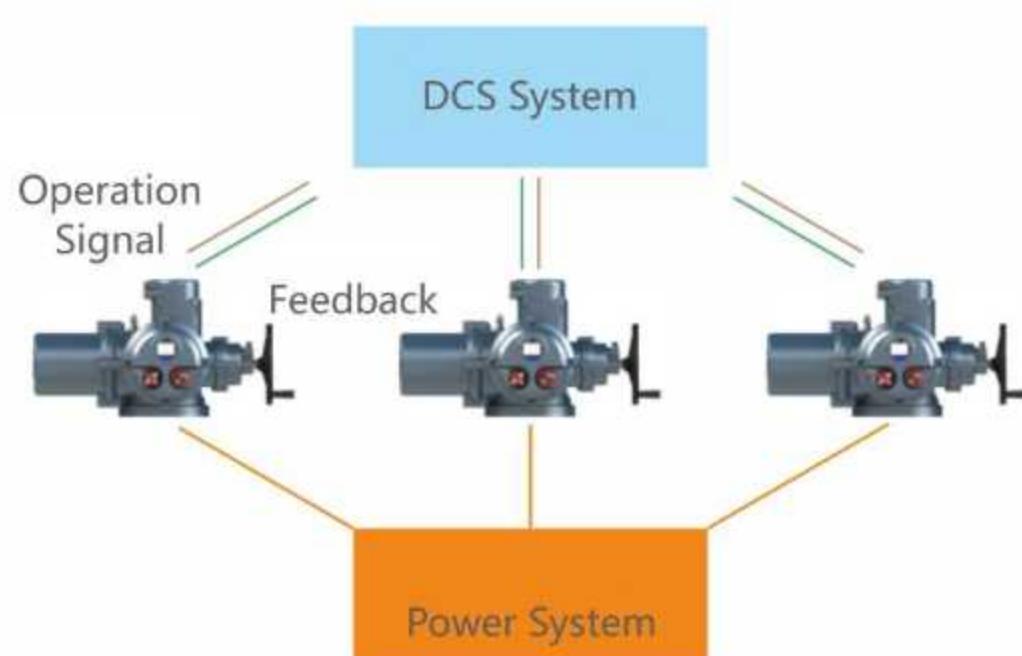


Economic

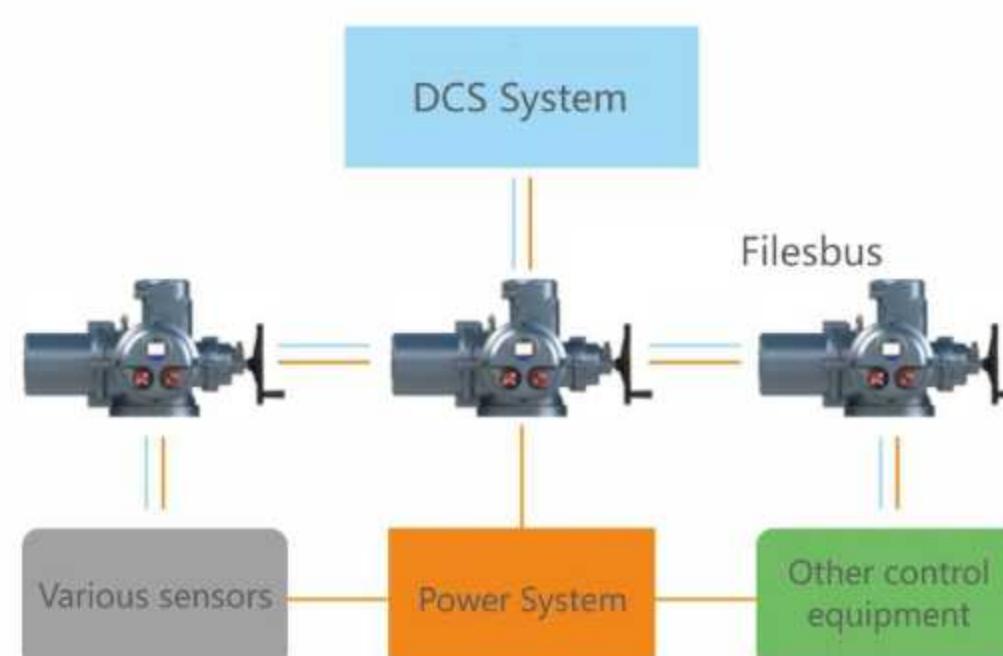
Economic actuator add electrical and logic control unit in the based of basic. It can directly accept control signal from remote control system. It has functions including switch operation, safety protection, status output. These information are displayed on the LCD screen for monitoring local control. In addition, it also has operation knobs, which can realize local control and select local or remote control mode. CASA economic actuator can offer 4-20mA valve feedback and 4 relay output to control system.

Intelligent

Intelligent actuator add extra functions in the based of economic. Including mechanical & electronic double torque protection, Chinese/English selection, relay configuration output, self-check and field-bus control. CASA intelligent actuator can offer 4-20mA valve feedback and 6 configuration relay output to control system. Field-bus control system(FCS) can support Modbus_RTU and Profibus_DP and different type of hardware interface.



Economic and Intelligent actuator common DCS control mode



Intelligent actuator field-bus control mode

AZ series intelligent multi-turn actuator

CASA focuses on the R & D and manufacturing of electric actuator. Strong R & D capabilities, rigorous management system, completed quality assurance system and mature production technology take our production a leading position in actuator field.

CASA intelligent actuator uses double-layer seal and non-intrusive design. The protection level of actuator is IP67 and the highest can reach IP68 under special order.

01

(Cable guide): (Standard) 2 x M24
(Optional) 1 x 1½ NPT (G1½, PG-36), 2 x ¾ NPT (G¾, PG-21)

02

The double seal system isolates terminal from the control unit. Even if the terminal cover is removed during wiring, the control unit will not be exposed to the outside. The double seal system ensures protection of electronic components.

AZ intelligent terminal: discal terminal (standard) and plug-in terminal (optional).



08

The three-phase motor designed for the actuator has the characteristics of large starting torque and low inertia, which can improve the accuracy of valve positioning. The motor has F insulation class and overheat protection.

03

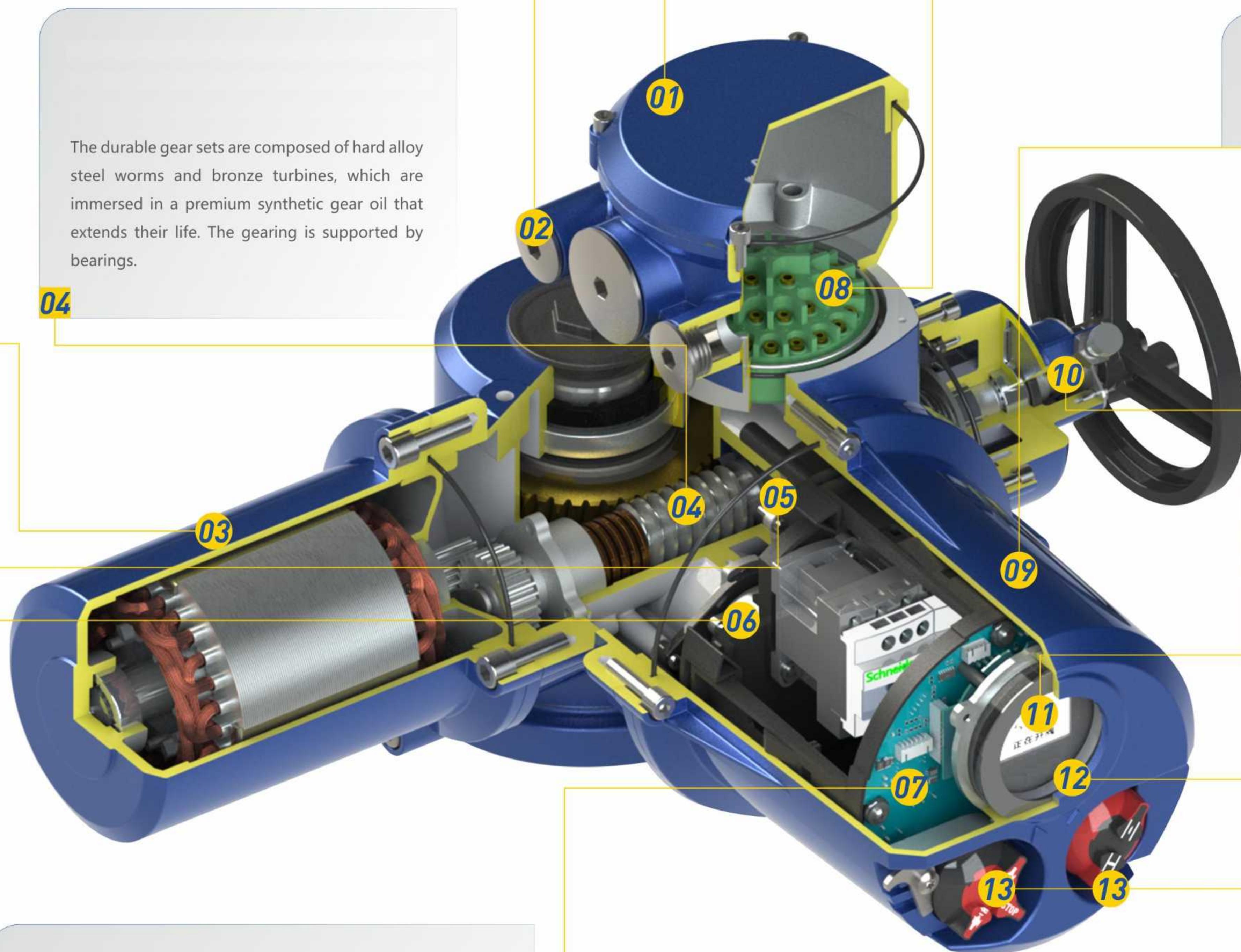
(Torque Protection)

Double torque protection is a new technical highlight of CASA actuator. Our actuator not only has mechanical torque limit protection, but also has electronic torque protection. Real-time measurement of torque changes and motor status during valve opening or closing ensure the safety and stability of valve. The double torque protection system demonstrates our commitment to safety and reliability.

05

The durable gear sets are composed of hard alloy steel worms and bronze turbines, which are immersed in a premium synthetic gear oil that extends their life. The gearing is supported by bearings.

04



09

Actuator has alloy aluminum die-casting shell, which can be sprayed with different protective coatings according to the working environment.

10

Electric-prioritized design and the mechanical locking mechanism (which prevents misoperation) ensure that the motor control circuit is automatically cut off under the manual operation.

11

For the power failure of the actuator, we can provide an emergency power supply unit (optional), which can help operator confirm the current position of the valve in the state of power failure.



12

LCD display provides real-time status information of actuator and real-time position of valve. Available in Chinese and English.

(Stroke Control)

CASA intelligent actuator uses a 24-bit absolute value encoder to control the position of valve. Valve position can be measured during electric or manual operation. And 24-bit absolute value encoder can store valve position without power. Our boundary anti-jitter technology ensure the stability and anti-interference of encoder.

06

The control unit consists of control, monitoring, and protection modules. It has phase sequence self-identification, phase loss protection, overload protection, short circuit protection, voltage detection, electronic brake (modulation) and self-checking functions. Provide real-time running parameters and data export. The plug-in connection of the control unit ensures fast and error-free removal and replacement.

07

The local control knob can open or close valve under the local control mode. Remote and local switch knob can change the control mode. These switches of knob use hall sensor components to achieve signal transmission through magnetic induction. There is no physical connection between the knob and hall sensor, ensuring tightness and reliability.

13

The setting and checking are performed by a knob or an remote by a sealed instruction window. It will not expose internal control components.

(Coding mode) : ① ② ③ ④ - ⑤ / ⑥ - ⑦ - ⑧

Number	Unit definition		
①	Sub-series	AZ	Multi-turn
		AQ	Part-turn
		ADQ	Quarter-turn with gearboxes
		AZX	Linear modulation
②	Explosion-proof		No marked
		B	In explosive environments
③	Rated torque		Kgf.m (*10 N.m)
④	Flange connection		Jb2920 No marked
		A	ISO5210 Thrust type
		B1	ISO5210 Not thrust type
		B4	ISO5210 Not thrust type
⑤	Speed		r/min
⑥	Working duty		Basic no marked
		ZK	Economic open-close
		ZT	Economic modulation
		IS	Intelligent open-close
		IM	Intelligent modulation
⑦	Filed Bus (Optional)	RM	Modbus-RTU
		RP	PROFIBUS-DP
⑧	Spilt control (Optional)	FT	With Spilt control part

→ AZ Multi-turn actuator

MODEL	Torque	Speed	Power	Current	Gear ratio	Max stem diameter	Weight
Unit	N.m	R/min	Kw	A	I	mm	Kg
AZ10	100	24	0.25	1.27	1: 24	28	30
		36	0.37	1.87	1: 16		
		48	0.55	2.79	1: 12		33
		72	0.75	3.26	1: 16		
		96	0.75	4.40	1: 12		
AZ15	150	24	0.37	1.87	1: 24	28	31
		36	0.55	2.79	1: 16		
		48	0.75	3.26	1: 12		33
		72	0.75	4.40	1: 16		
		96	0.75	5.70	1: 12		
AZ20	200	24	0.55	2.79	1: 24	40	33
		36	0.75	3.26	1: 16		
		48	0.75	4.40	1: 12		35
		72	0.75	5.70	1: 16		
		96	1.5	7.43	1: 12		
AZ30	300	24	0.75	3.26	1: 24	40	35
		36	1.1	4.40	1: 16		
		48	1.1	5.70	1: 12		37
		72	1.5	7.43	1: 16		
		96	1.5	9.12	1: 12		
AZ45	450	24	1.1	4.40	1: 24	48	47
		36	1.5	5.70	1: 16		
		48	2.2	7.43	1: 12		49
		72	2.2	9.12	1: 16		
		96	3.0	11.05	1: 12		
AZ60	600	24	1.5	5.70	1: 24	48	49
		36	2.2	7.43	1: 16		
		48	3.0	10.10	1: 12		51
		72	3.0	11.05	1: 16		
		96	4.0	13.25	1: 12		
AZ90	900	24	2.2	9.12	1: 24	60	65
		36	3.0	10.10	1: 16		
		48	3.0	11.05	1: 12		68
		72	4.0	13.25	1: 16		
AZ120	1200	24	3.0	10.10	1: 24	60	68
		36	3.0	11.05	1: 16		
		48	4.0	13.25	1: 12		
AZ180	1800	24	4.0	13.25	1: 30	70	147
		48	5.5	15.19	1: 15		

CASA

CASA actuator main technical parameters

AZ250	2500	24	5.5	15.19	1: 30	70	152
		48	7.5	20.72	1: 15		
AZ350	3500	24	7.5	20.72	1: 30	80	168

→ AQ part-turn actuator

MODEL	Torque	Speed	Power	Current	Gear ratio	Max stem diameter	Weight
Unit	N.m	R/min	Kw	A	I	mm	Kg
AQ10	100	1	0.06	0.65	1: 88	20	11
AQ20	200	1	0.09	0.78	1: 88	28	13
AQ30	300	1	0.12	0.86			
AQ40	400	1	0.18	1.1	1: 74	40	25
AQ60	600	1	0.18	1.1			
AQ90	900	1	0.25	1.27			
AQ120	1200	1	0.37	1.87			
AQ180	1800	0.5	0.55	2.79			

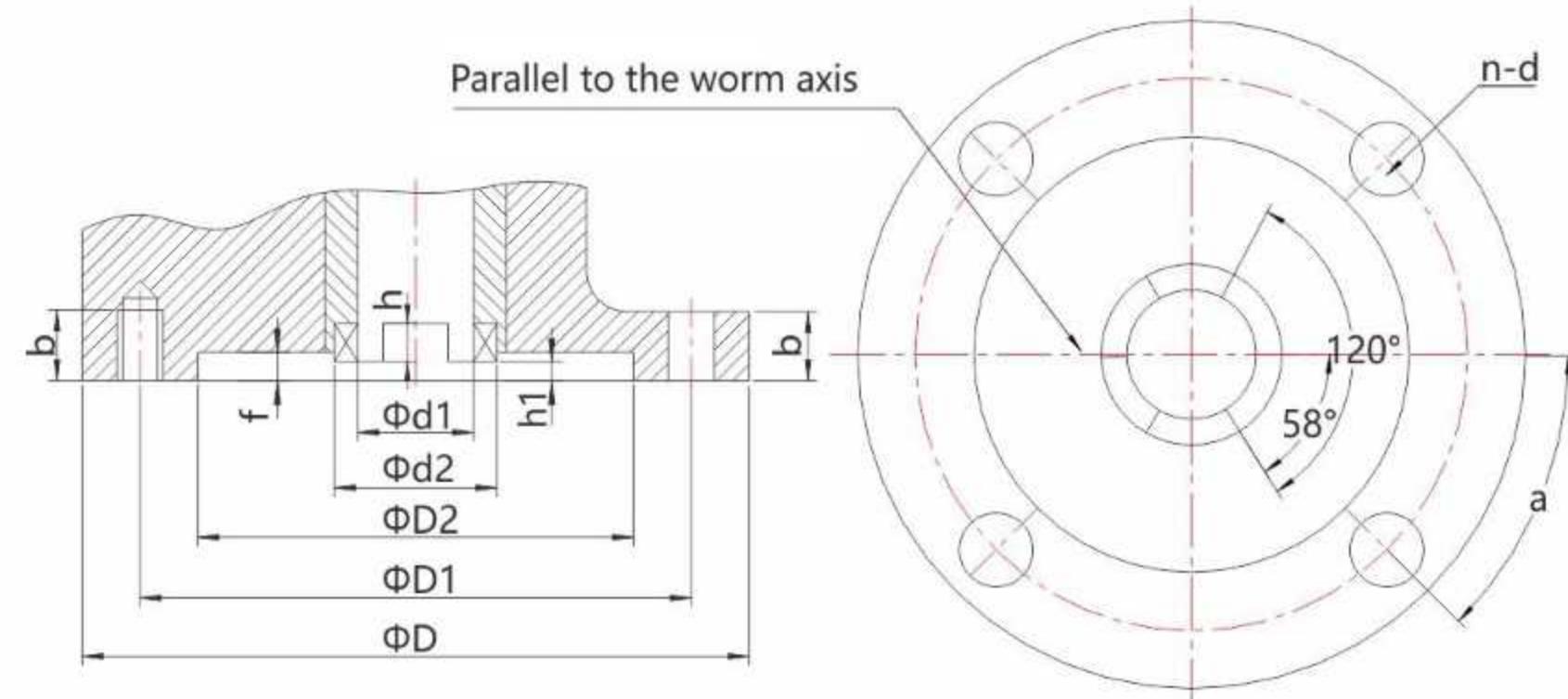
→ ADQ quarter-turn actuator with gearboxes

MODEL	Torque	Speed	First level	Power	Current	Gearbox		Weight
						Model	Gear ratio	
Unit	N.m	R/min		Kw	A	#	I	Kg
ADQ30	3000	2.3	AZ20-24	0.55	2.39	D6	55: 1	53
ADQ40	4000	2.3	AZ30-24	0.75	3.26	D6	55: 1	55
ADQ50	5000	2.8	AZ30-24	0.75	3.26	D8	67: 1	77
ADQ80	8000	2.8	AZ45-24	1.1	4.18	D8	67: 1	79
ADQ12	12000	3.4	AZ60-24	1.5	5.70	D9	81:1	95
ADQ16	16000	3.4	AZ90-24	2.2	7.43	D9	81:1	108
ADQ25	25000	3.25	AZ120-24	3.0	9.12	D10	78: 1	135
ADQ32	32000	3.25	AZ180-24	4.0	11.05	D10	78: 1	226
ADQ63	63000	3.4	AZ250-24	5.5	15.19	D11	82: 1	235

→ AZX linear modulation actuator

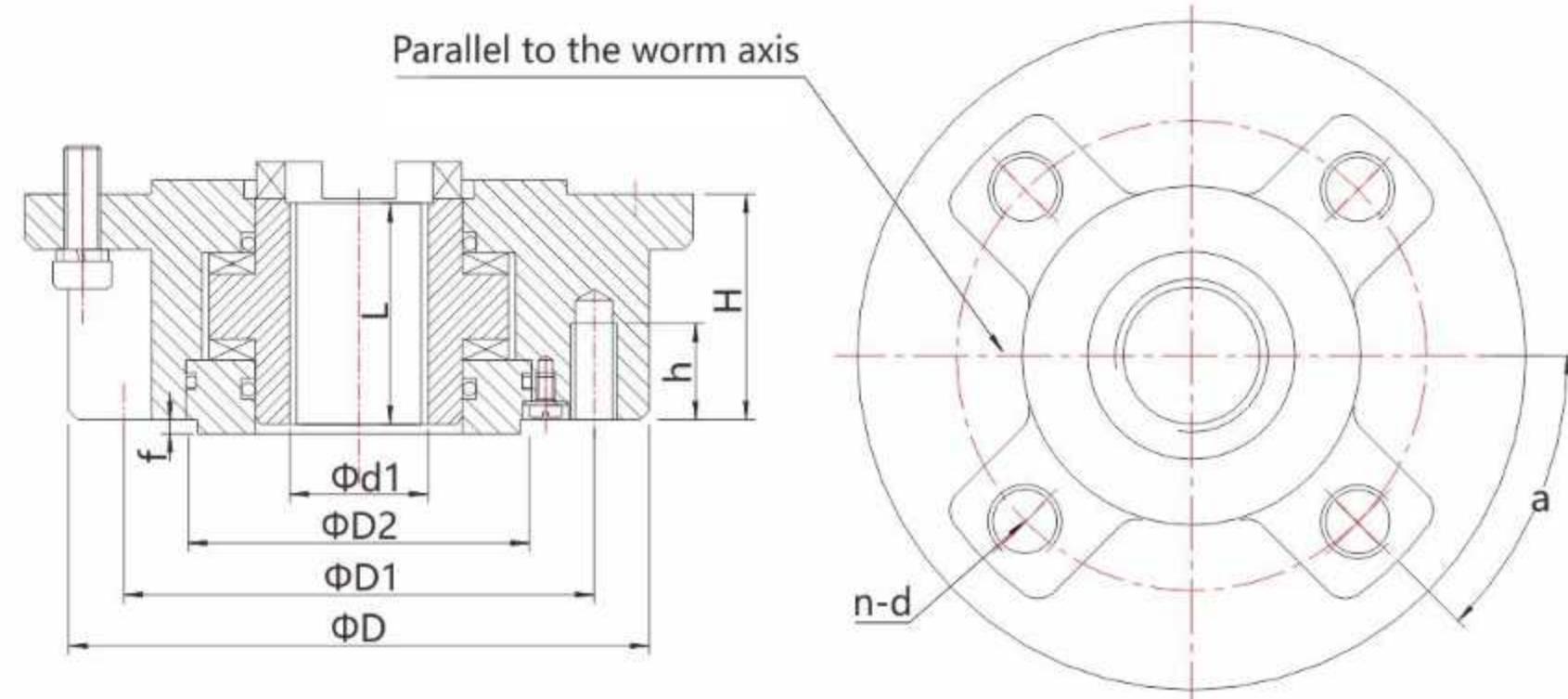
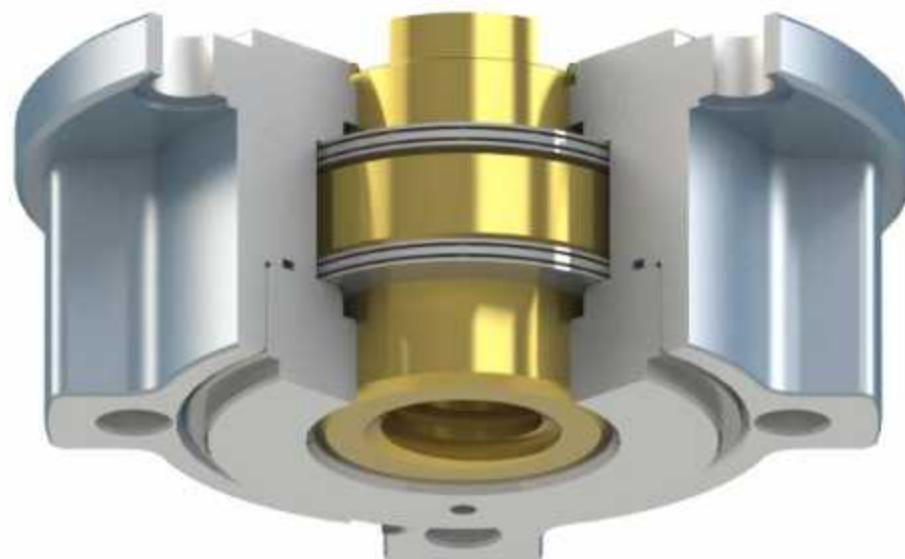
MODEL	Thrust	Torque	Speed	Max stroke	Power	Current
Unit	N	N.m	mm/s	mm	Kw	A
AZXC4000	4000	30	0.5	40	0.06	0.65
AZXC6300	6300	40	0.5	40	0.09	0.78
AZXC10000	10000	50	0.83	60	0.12	0.86
AZXC16000	16000	80	0.83	60	0.18	1.1
AZXC25000	25000	100	0.83	100	0.25	1.27

The standard: JB2920



MODEL	FLANGE	D	D1	D2	d1	d2	h	h1	f	b	n-d	a
AZ10/AZ15	J2	145	120	90	30	45	8	2	5	12	4-M10	45°
	J2 I	115	95	75	26	39	6			10	4-M8	
AZ20/AZ30	J3	185	160	125	42	58	10	3	6	15	4-M12	
	J3 I	145	120	90	30	45	8			12	4-M10	
AZ45/AZ60	J4	225	195	150	50	72	12			20	4-M16	
AZ90/AZ120	J5	275	235	180	62	82	14			25	4-M20	
	J5 I	230	195	150	50	72	12			20	4-M16	
AZ180/AZ250	J7	330	285	220	72	98	16			30	4-Φ27	
AZ350	J8	380	340	280	82	118	20			35	8-Φ22	

Optional: ISO5210-A (GB/T12222-2005 Thrust type)

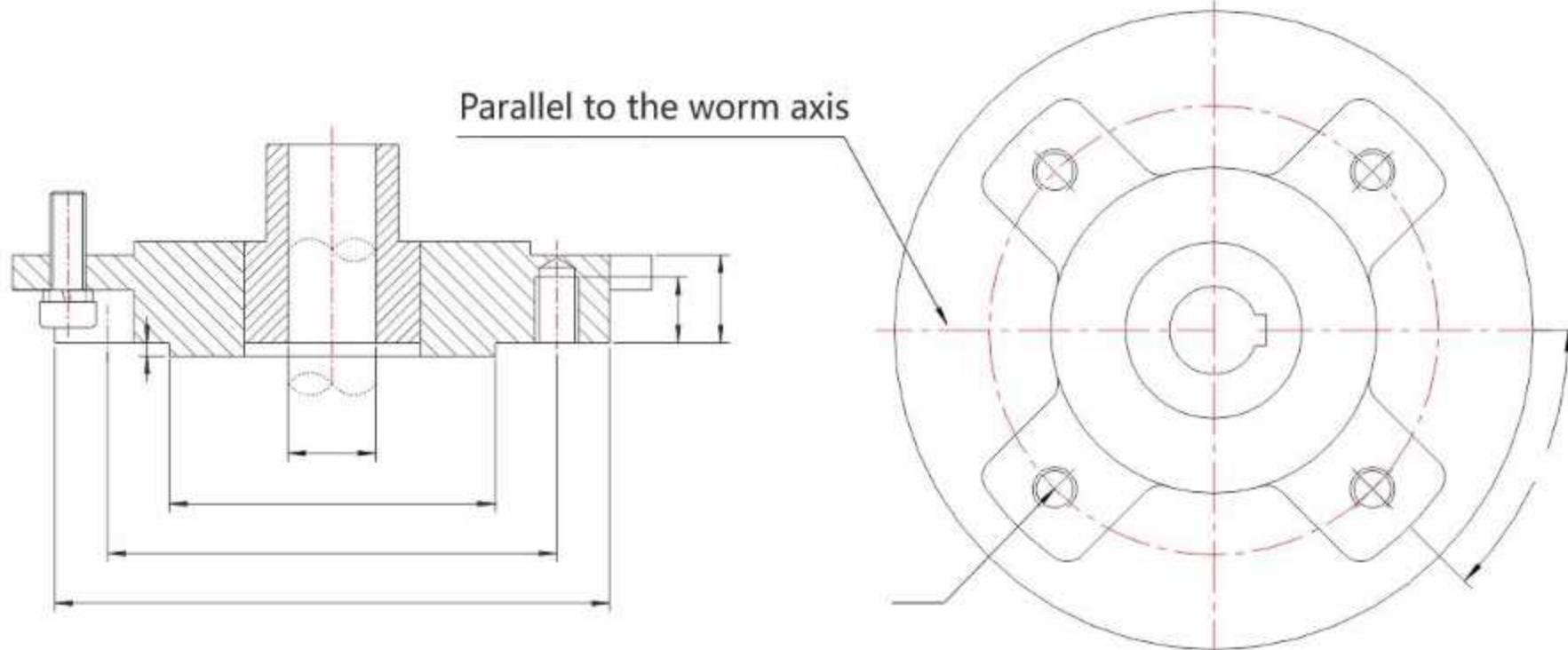


MODEL	FLANGE	D	D1	D2	L	f	d1(max)	h	n-d	H	a
AZ10/AZ15	F10/A	125	102	70	40	3	Tr28	20	4-M10	49	45°
AZ20/AZ30	F14/A	175	140	100	60		Tr40	30	4-M16	56	
AZ45/AZ60	F16/A	210	165	130	80		Tr48	30	4-M20	81	
AZ90/AZ120	F25/A	300	254	200	85		Tr60	30	8-M16	83	22.5°
AZ180/AZ250	F30/A	350	298	230	130		Tr70	30	8-M20	128	

AZ

Flange size of AZ multi-turn actuator

Optional: ISO5210-B4 (GB/T12222-2005)



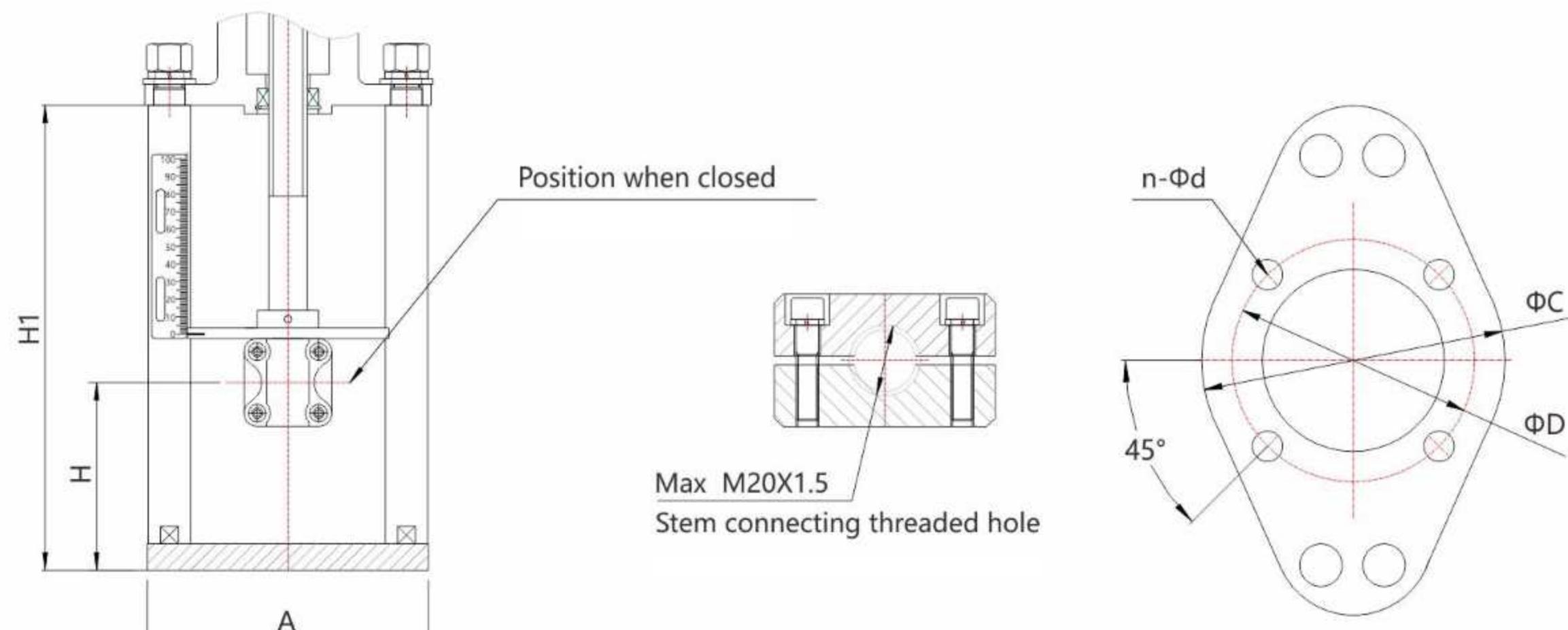
MODEL	FLANGE	D	D1	D2	f	d1(max)	h	n-d	H	a
AZ10/AZ15	F10 /B4	125	102	70	3	Φ20	15	4-M10	20	45°
AZ20/AZ30	F14/B4	175	140	100		Φ30	15	4-M16	25	
AZ45/AZ60	F16/B4	210	165	130		Φ40	20	4-M20	25	
AZ90/AZ120	F25/B4	300	254	200	5	Φ50	20	8-M16	30	22.5°
AZ180/AZ250	F30/B4	350	298	230		Φ60	20	8-M20	30	

AZXC

Flange size of AZX linear modulation actuator

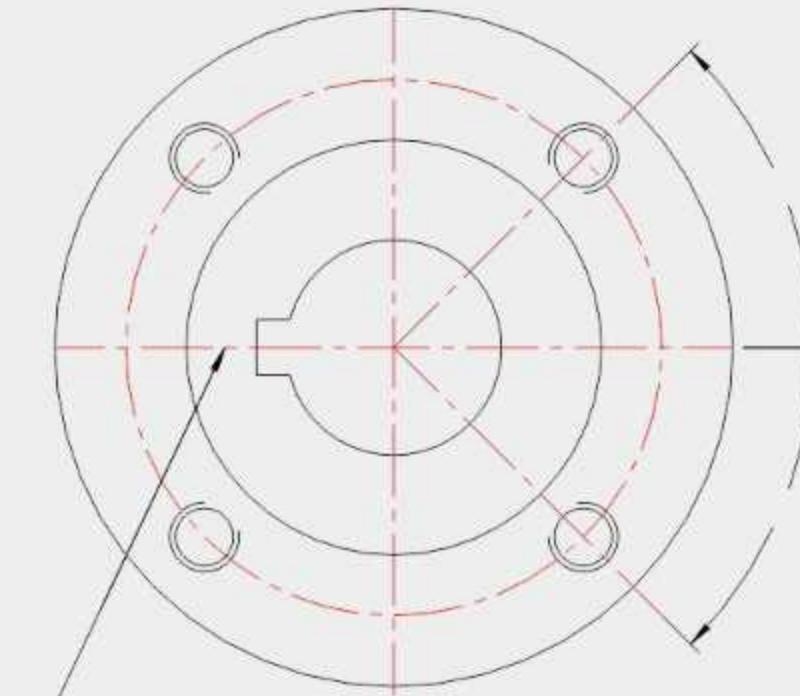
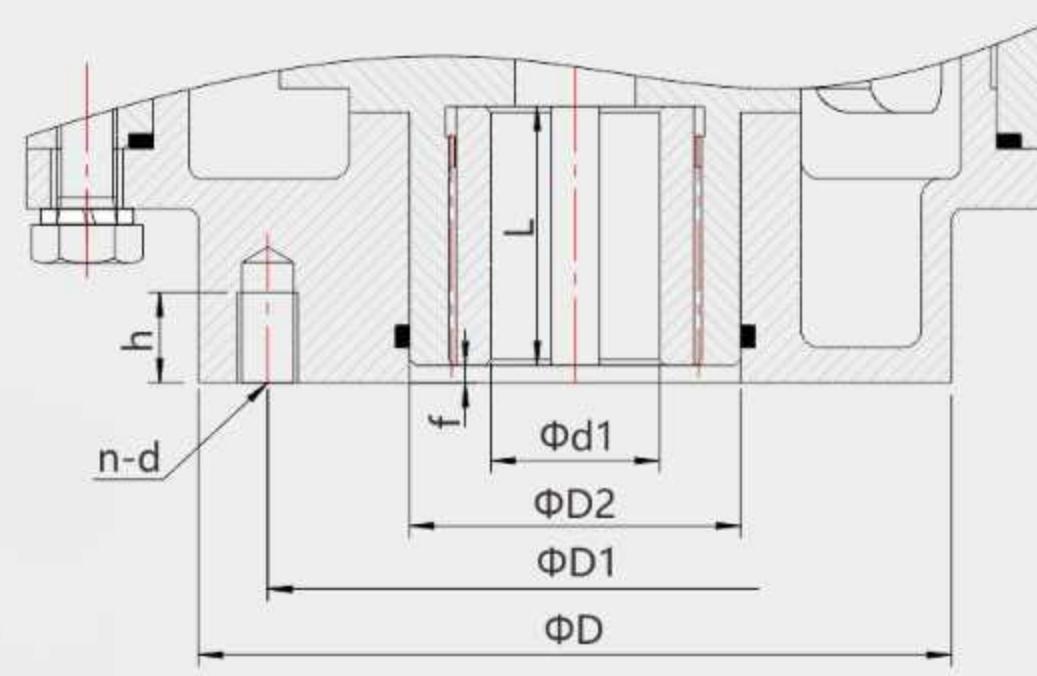


Optional: ISO5210-A (GB/T12222-2005 Thrust type)



MODEL	H	H1	A	ΦC	ΦD	n-Φd	M
AZXC4000	107	225	168	100	80	4-10	Tr28
AZXC6300	107	225	168	130	105	4-12	Tr40
AZXC10000	107	225	168	130	118	4-14	Tr48
AZXC16000	107	225	168	130	118	4-14	Tr60
AZXC25000	107	225	168	168	130	4-18	Tr70

The standard configuration: ISO5211: 2001(GB/T12223-2005)



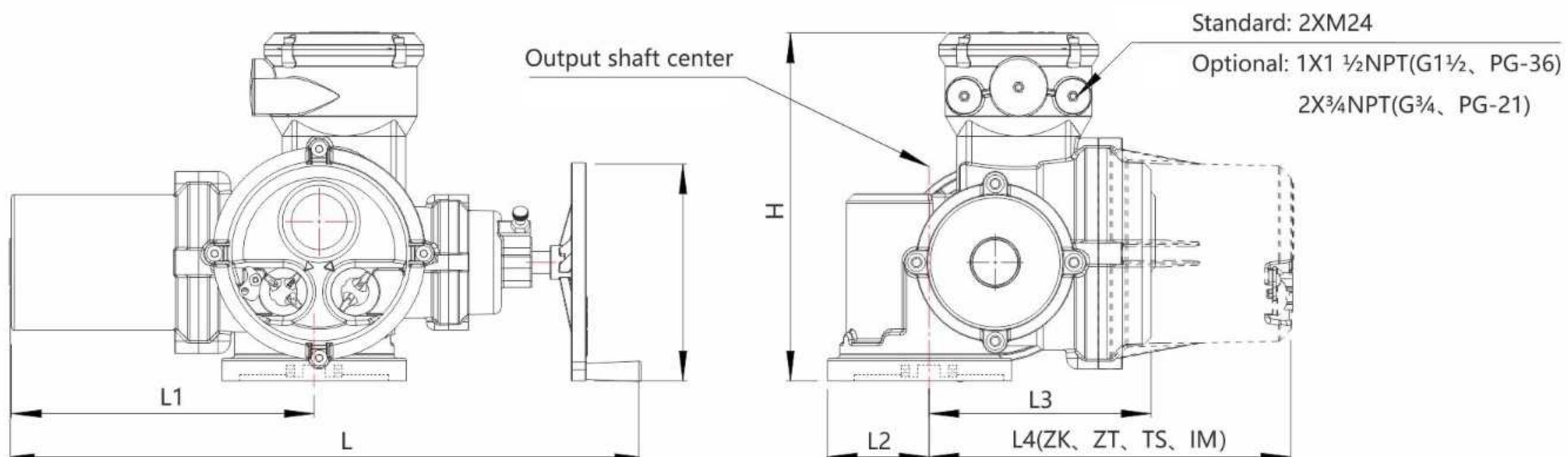
MODEL	FLANGE	ΦD	$\Phi D1$	$\Phi D2$	$n-d$	$\Phi d1(\text{Max})$	L	f	h
AQ10	F05	65	50	35	4-M6	20	45	5	15
AQ20	F07	90	70	55	4-M8	28	45	5	15
AQ30	F10	125	102	70	4-M10	28	45	5	15
AQ40									
AQ60	F10	125	102	70	4-M10	40	65	5	24
AQ90	F12	150	125	85	4-M12	40	65	5	24
AQ120	F14	175	140	100	4-M16	40	65	5	24
AQ180									
ADQ300	F16	210	165	130	4-M20	45	80	5	30
ADQ400									
ADQ500	F25	300	254	200	8-M16	70	100	5	24
ADQ800									
ADQ1200	F30	350	298	230	8-M20	90	105	5	30
ADQ1600									
ADQ2500	F35	415	356	260	12-M20	105	125	5	45
ADQ3200									
ADQ6300	F40	475	406	300	12-M20	130	160	8	54

Note:

The standard configuration of the coupling sleeve is a solid core, which is processed by the customer as required, but the maximum hole diameter cannot exceed the size listed in $\Phi d1$ in the table.

AZ

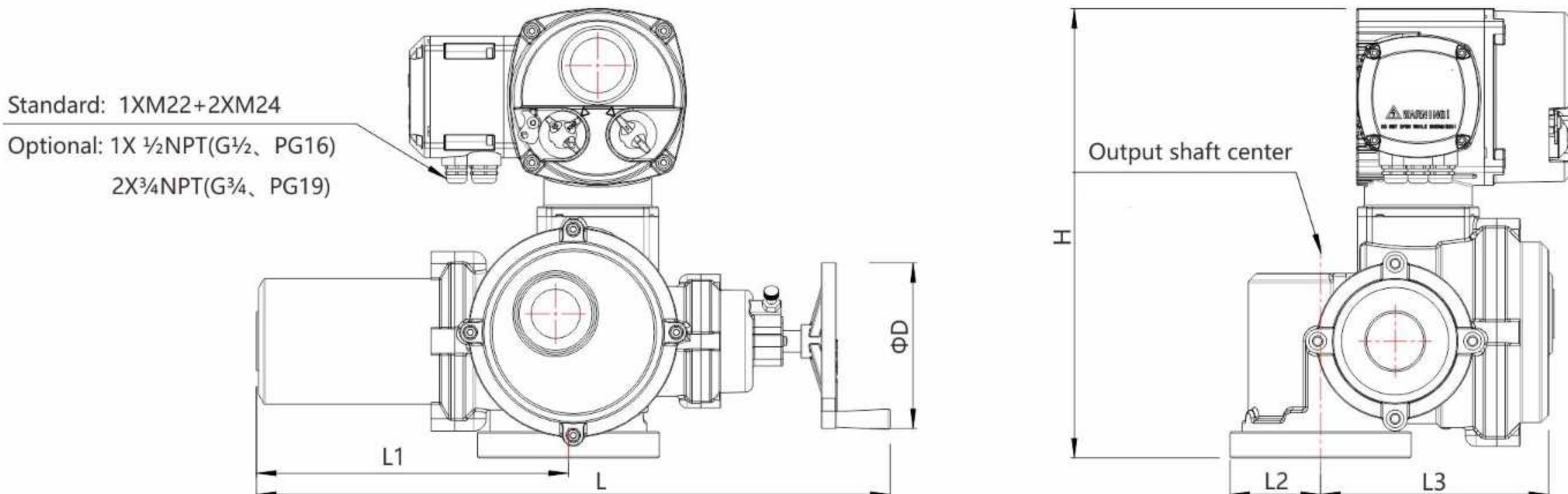
Size of AZ multi-turn actuator



MODEL	H	L	L1	L2	L3	L4	ΦD
AZ10/AZ15	285	560	250	75	200	310	160
AZ20/AZ30	335	640	300	95	245	385	200
AZ45/AZ60	340	710	335	115	265	405	250
AZ90/AZ120	350	795	390	135	285	425	250
AZ180/AZ250	425	830	460	165	315	455	350
AZ350	425	865	495	165	315	455	350

AZ

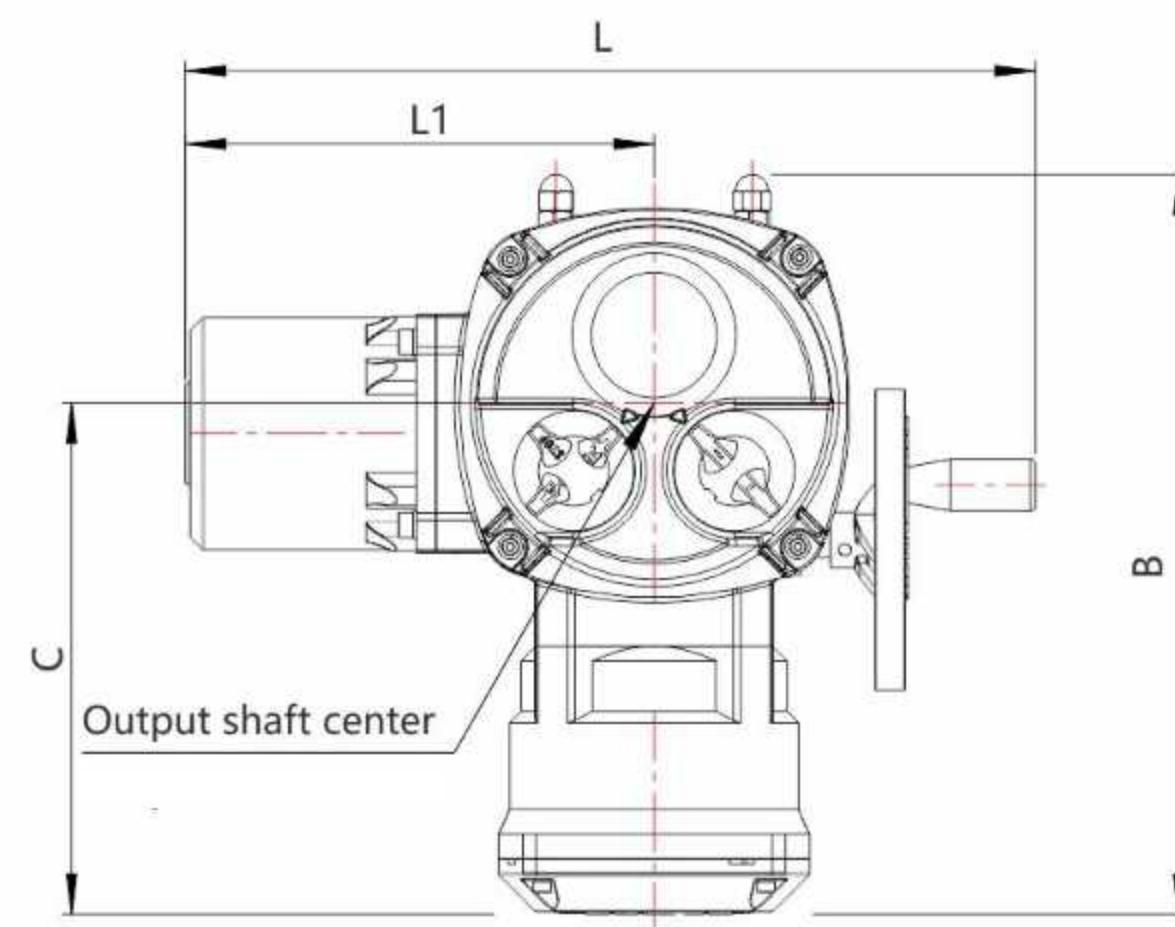
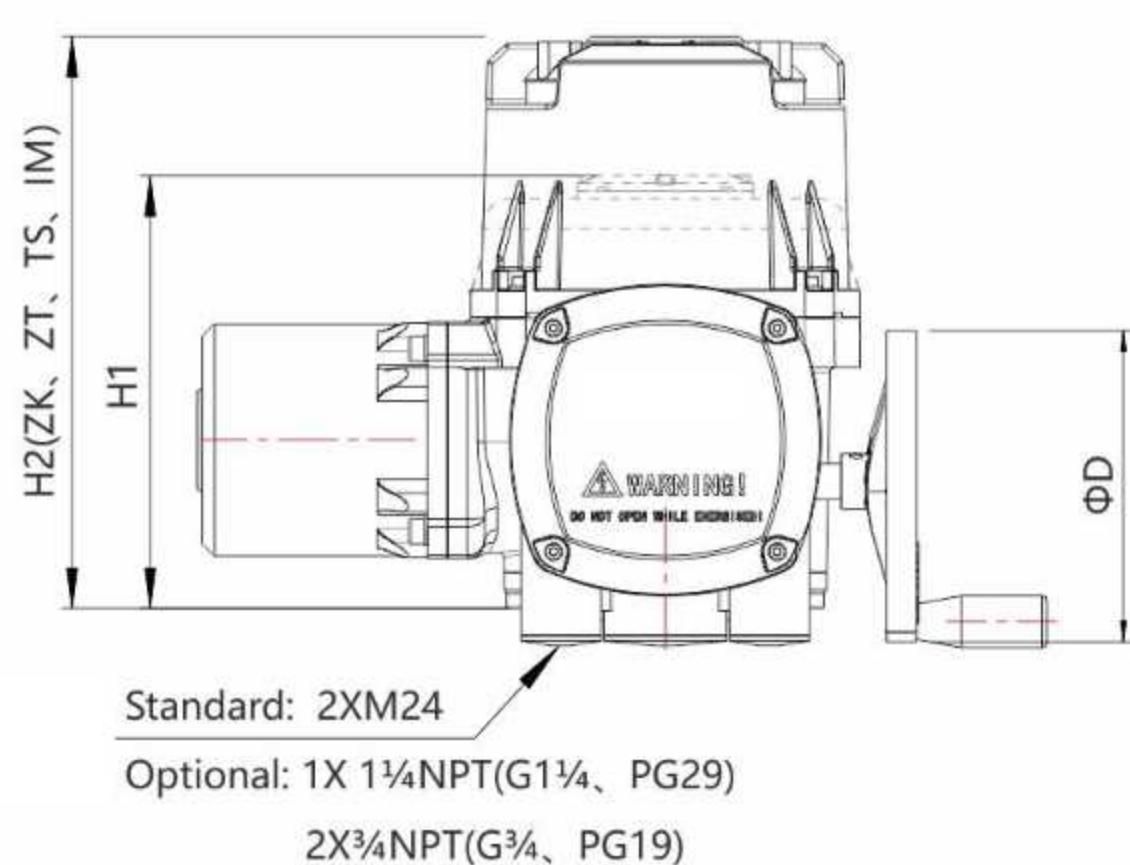
Size of AZ-FT split control actuator



MODEL	H	L	L1	L2	L3	ΦD
AZ10/AZ15	300	560	250	75	200	160
AZ20/AZ30	370	640	300	95	240	200
AZ45/AZ60	375	710	335	115	265	250
AZ90/AZ120	385	795	390	135	285	250
AZ180/AZ250	465	830	460	165	315	350
AZ350	465	865	495	165	315	350

AQ

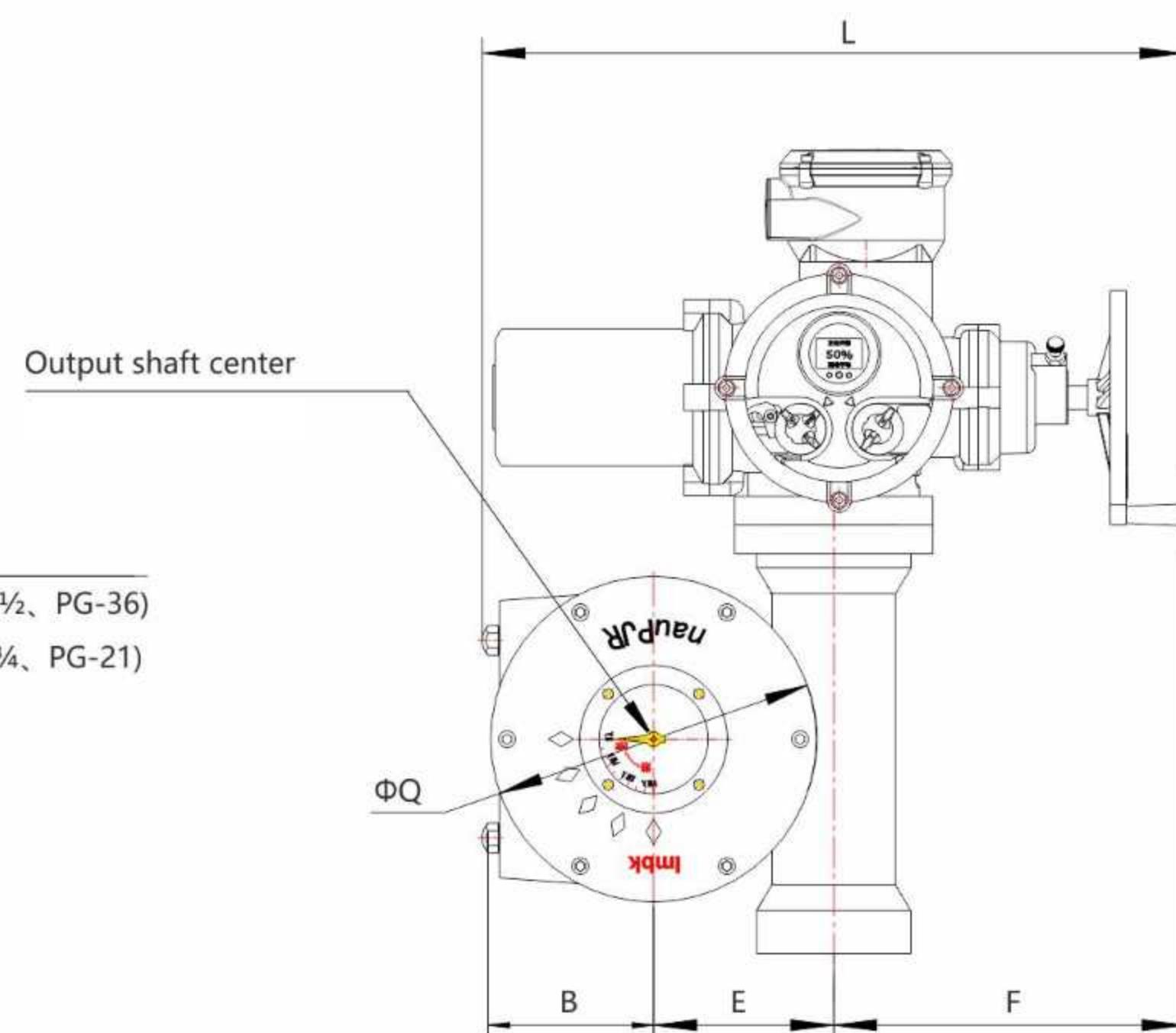
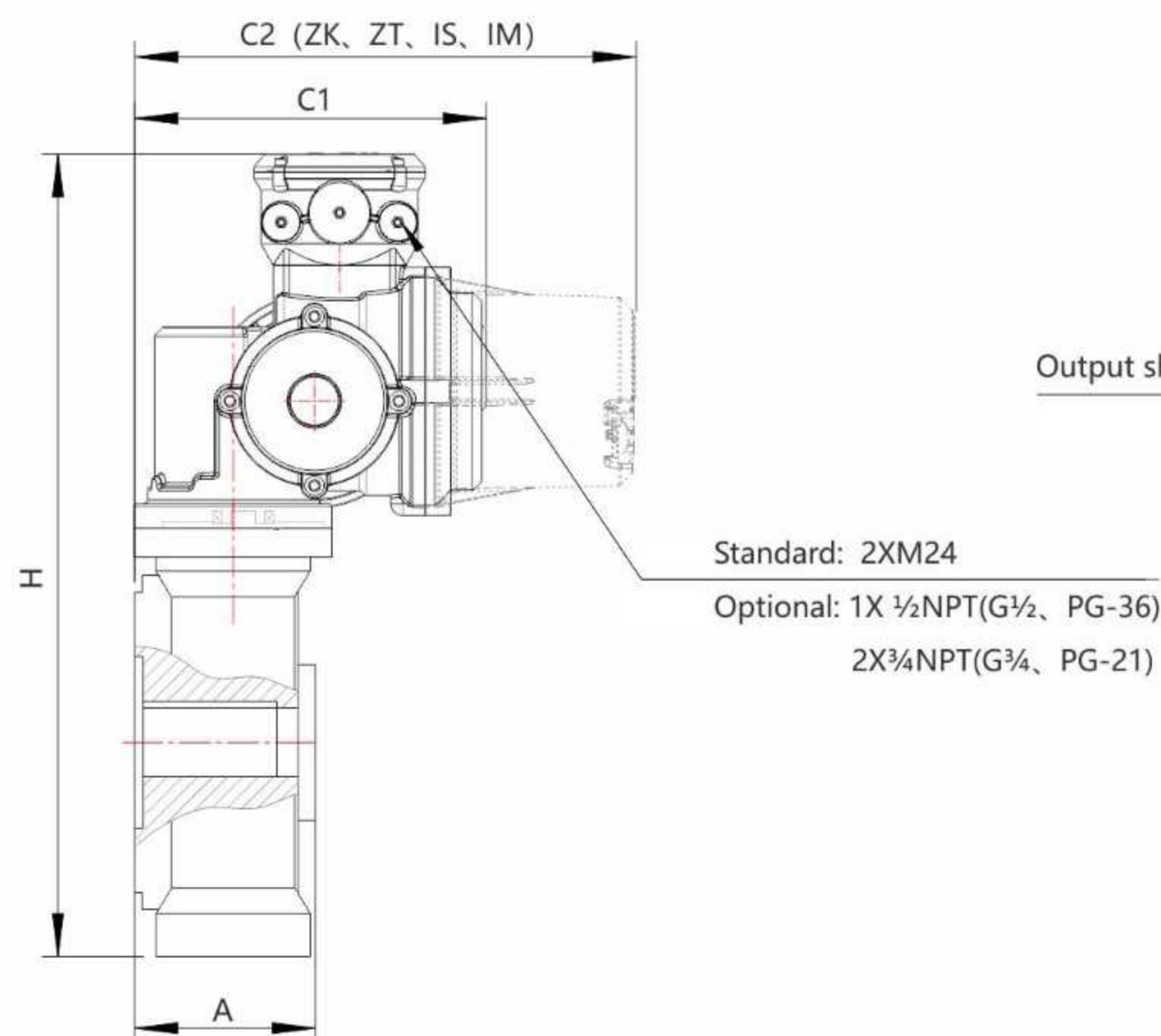
Size of AQ part-turn actuator



MODEL	H1	H2	L1	L	B	C	ΦD
AQ10/20/30/40	175	230	190	340	295	205	160
AQ60/90/120/200	230	285	240	465	355	240	200

ADQ

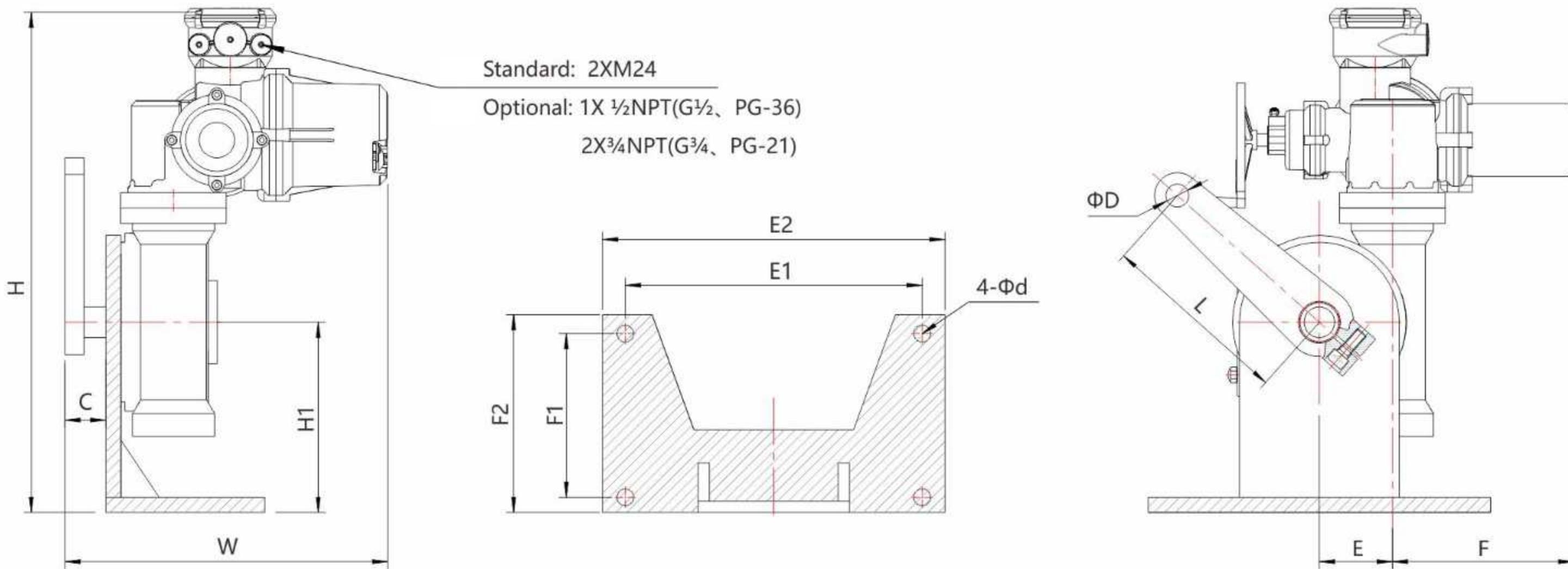
Size of ADQ quarter-turn actuator with gearboxes



MODEL	Gearbox	H	A	C1	C2	B	E	F	ΦQ
ADQ300	D6	645	121	340	480	135	128.5	340	270
ADQ400	D6	645	121	340	480	135	128.5	340	270
ADQ500	D8	730	150	340	480	165	154.5	340	330
ADQ800	D8	735	150	380	520	165	154.5	375	330
ADQ1200	D9	775	150	380	520	200	186.5	375	400
ADQ1600	D9	785	150	420	560	200	186.5	405	400
ADQ2500	D10	825	170	420	560	232.5	223	405	460
ADQ3200	D10	900	170	480	620	232.5	223	370	460
ADQ6300	D11	1035	205	480	620	285	276	370	580

AQ/ADQ

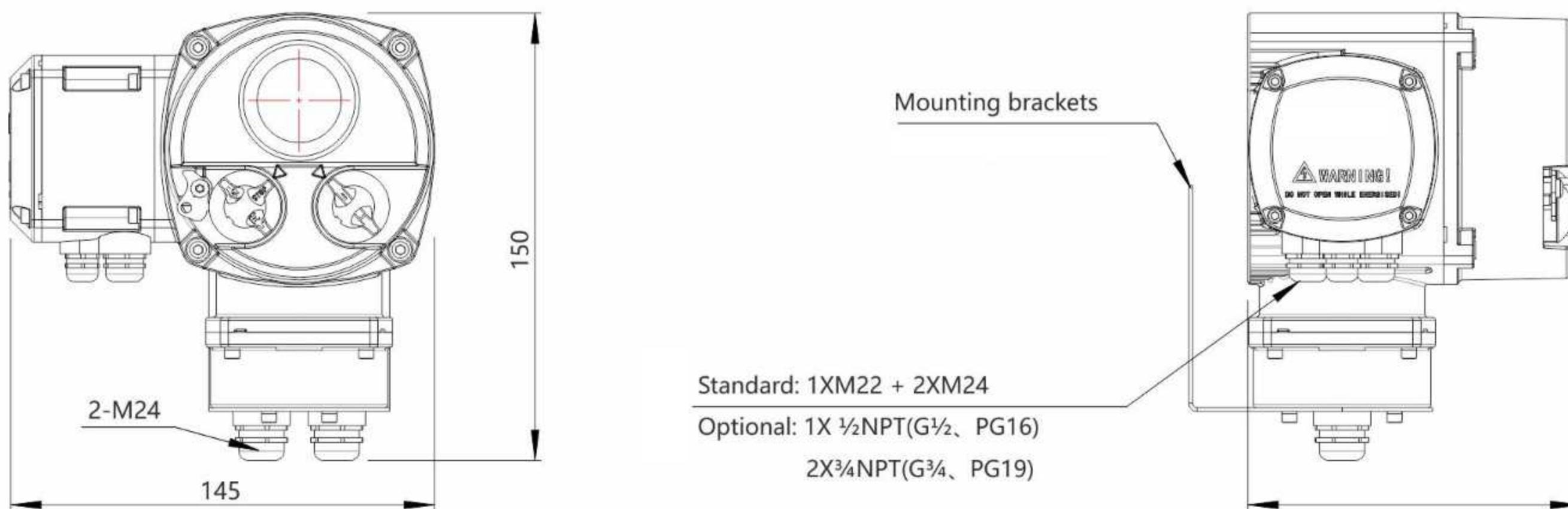
Size of base arm type actuator

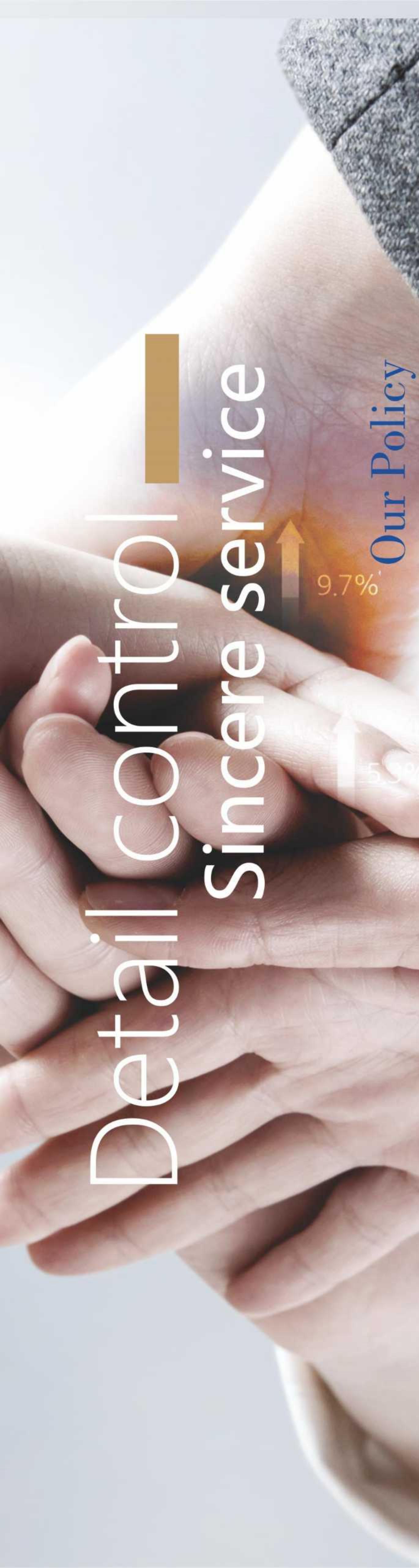


MODEL	W	H	H1	C	F1	F2	E1	E2	E	F	L	ΦD	4-Φd
AQ10-40	380	385	200	56	165	220	330	370	—	235	150	20	4-22
AQ60-180	420	420	230	56	165	220	330	370	—	285	200	20	4-22
ADQ300	590	765	215	56	180	210	390	420	128.5	300	170	20	4-22
ADQ400	590	765	215	56	180	210	390	420	128.5	300	170	20	4-22
ADQ500	630	770	250	76	200	250	450	480	154.5	300	170	30	4-22
ADQ800	630	770	250	76	200	250	450	480	154.5	335	170	30	4-22
ADQ1200	597	782	250	76	200	250	450	480	186.5	335	170	30	4-22
ADQ1600	638	852	250	76	200	250	450	480	186.5	390	170	30	4-22
ADQ2500	638	852	300	82	270	315	510	560	223	390	250	30	4-33

FT

Size of AZ-FT split control unit





Detail control
Sincere service
Our Policy

CASA Actuator



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Our Policy

Quality First, Credit First, Management First, Service First

Quality First:

Quality is the lifeblood of an enterprise

Credit First:

Credit is the foundation of an enterprise

Management First:

Management is the cornerstone of an enterprise

Service First:

Service is the soul of an enterprise