The optimum drive choice for pressing,riveting,punching and clamping

PNEUMATIC
HYDRAULIC CYLINDER

Clear soft power source

Force drive Press force 2-2000KN

增力驱动 冲压力 2—2000kN

http://www.simitch.cn

SuZhou Simitch Machinery CO.,LTD

Add:Building 13,18 xinyuan Road,Taicang,Jiangsu,China

Tel.: 0512-5310509753105098

Fax: 0512-53105101

Email: fredah@simitch.cn

Website: www.simitch.com

Press force 2-2000kN,Short acting pressure stroke, best choice

Independent integrated power unit,huge punching force output in the smallest space,

pneumatic hydraulic technology can give full play to its advantages.

SIMITCH adheres to German technology, digests, absorbs and transforms the pneumatic hydraulic conversion technology with core technology, and knows how to effectively combine the advantages of compressed air

and hydraulic oil.

SIMITCH series pneumatic hydraulic cylinders can provide up to 2000kN punching force.

Inside the pneumatic hydraulic cylinder, the working piston is a high-precision double-guided actuator piston, an integrated design structure with a high-pressure working plunger cylinder. Strictly ensure the absolute isolation structure of gas and liquid, fast movement, high-precision repetitive movement through the double-supported working piston, and the pneumatic control mechanism ensures a significant high speed, boosted and powerful working state, and implements a high-pressure resistant plunger cylinder to implement a large output, ensuring the accuracy of the force applied during the gas-hydraulic working stage, and an ultra-long service life. Compressed air and oil are carefully separated to effectively prevent any potential impurity risks.

SIMITCH pneumatic hydraulic cylinders are controlled similarly to conventional double-acting cylinders. The highly optimized integrated design and the small number of moving functional parts minimize wear and extend service life. The low pressure advantage of fast strokes, reduced low impact forces, soft mold contact, and low noise levels are guaranteed.

The design and application of the booster piston adopts the design and application of mechanical springs to realize the working mode of single-acting cylinders, ensuring low energy consumption, and no compressed air is required for the return stroke: the mechanical spring realizes the dual function of the booster piston reset and the pre-stressing of the oil storage piston. The pre-stressing of the oil storage piston forms a constant pressure on the oil tank, allowing the cylinder to be assembled in any alignment.

When using the smallest valve cross section, the low energy consumption per unit can significantly increase the speed and save installation costs and space.

Advantages

Advantage1
High stroke frequency

Advantage2
Long lifetime

Advantage3
Low energy consumption

Advantage4
Low noise

Advantage5
Min. maintenance cost

SIMITCH pneumatic hydraulic booster is a complete drive system. Its different structural forms and specially designed accessories make it suitable for different situations. Special designs, such as welding cylinders, make this gas-hydraulic booster extremely suitable for different user requirements.

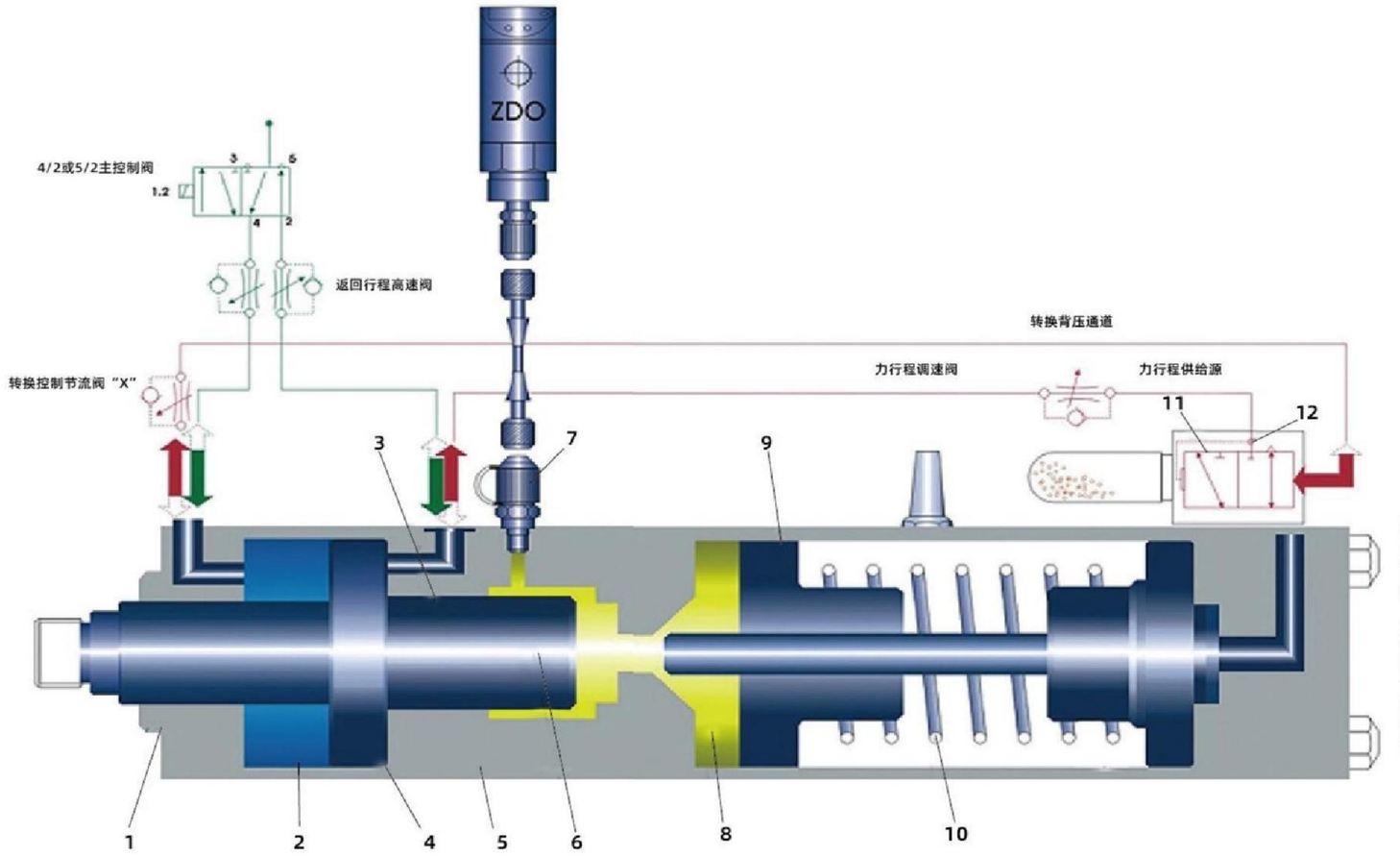
Rigorous design runs through every detail of the product, and thousands of gas-liquid booster cylinders have been perfectly applied in production practice, proving this point.

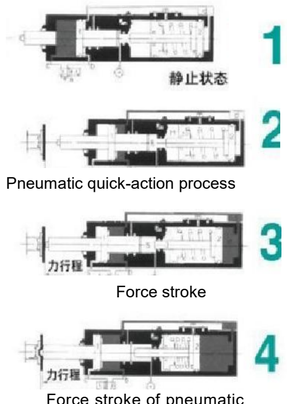
1.Install a precise plate with threaded connection on the pneumatic hydraulic cylinder, so that the gas-liquid booster cylinder can be accurately positioned and installed on the machine body.

2.Long-life buffer parts are installed on both sides of the working piston, which is the key to ensure low noise during efficient operation.

3. Advanced seals allow the use of non-lubricated compressed air.

4. After long-term testing and adjustment,all sealing installation technologies have been optimized.





SIMITCH pneumatic hydraulic cylinder working process:
The main control valve a of the rapid stroke is activated, and the working piston 1 moves out during the rapid stroke until it encounters external resistance at a certain position. The external resistance opens the switching valve of the control force stroke.The working stroke conversion piston 2 closes the working oil chamber 5 and squeezes it to a maximum oil pressure of 400 bar. This oil pressure acts on the back of the working piston rod 1 to complete the force stroke.
After returning to the stroke conversion main control valve a, the air in the space e is automatically discharged for the stroke control valve d, and the working piston 1 and the conversion piston 2 return to their initial positions.

5.Complete air-oil isolation is the basic prerequisite for ensuring long-term trouble-free operation of the pneumatic-hydraulic cylinder. SIMITCH's sealing technology and devices successfully prevent air from entering the oil chamber.

6.The double-supported working piston rod is a key guarantee for the safety, accuracy and reliability of the SIMITCH pneumatic-hydraulic booster, a power-driven actuator that has a small size but can achieve great punching force.

7. Each pneumatic hydraulic cylinder has a high-pressure measurement and control interface to perform the following functions:

-Setting the punching force that is not affected by the compressed air pressure to control the return stroke.

-Monitoring the system pressure and using it to control the punching quality.

-The following functions can be introduced, such as turning on the welding current when a certain punching force is reached.

-Connecting a pressure gauge, etc.

8. Special oil replenishment device. In addition to achieving simple and fast oil replenishment, it can also prevent operational errors when filling the oil reservoir.

9.Constant pressure oil storage system stores sufficient hydraulic oil for long-term reliable operation of the pneumatic hydraulic cylinder.

10.The spring has a dual function, which can not only return the booster piston to the starting position, but also generate pre-pressure in the oil storage chamber, so that when the gas circuit of the pneumatic hydraulic cylinder is closed, the oil in the oil storage chamber can also ensure a certain pre-pressure, thereby ensuring that the pneumatic hydraulic cylinder can work reliably in any installation direction and position.

In addition, this spring device has made a very outstanding contribution to reducing the air consumption of the pneumatic hydraulic cylinder during operation. The return of the pneumatic hydraulic cylinder piston to the starting position is non-pneumatic and does not require compressed air.

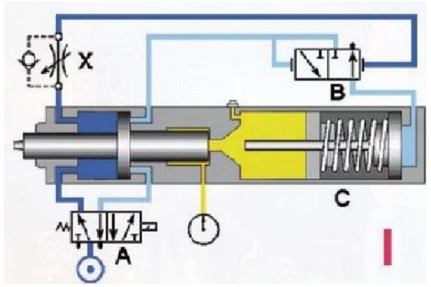
11. During the force stroke, high pressure thrust is generated by the booster piston. A simple design change to the booster piston can well meet the changed force stroke requirements.

12.Whenever the working piston rod encounters external resistance at any position in the rapid-forward stroke, the gas-liquid booster cylinder can automatically realize the conversion from the rapid-forward stroke to the force stroke, and the conversion time is adjusted by the throttle valve "X".

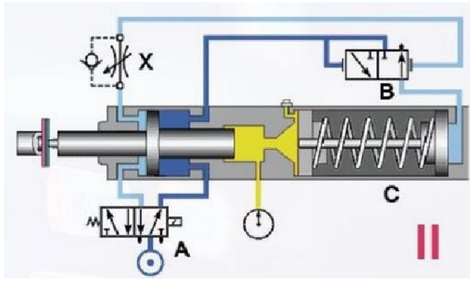
13.The entire set of functional controls are centrally installed on the pneumatic hydraulic cylinder. The SIMITCH pneumatic hydraulic cylinder is controlled by a 4/2 or 5/2 reversing valve, just like an ordinary tandem cylinder.

If you need other control methods, such as using a travel switch to control the force stroke or fast forward stroke, or using different pressures to control the force stroke or using a proportional valve, these can all be realized without a doubt.

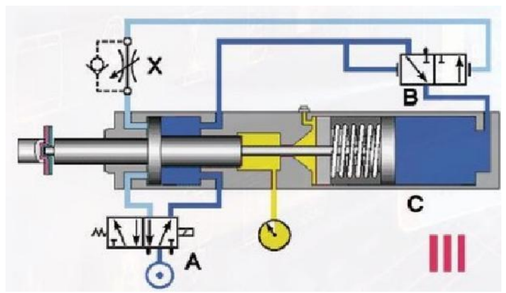
Advantages of pneumatic hydraulic cylinder



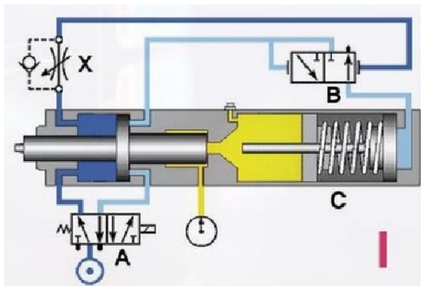
●Fast forward stroke: driven by the fast forward cylinder at the front to bring the mold into position and contact the workpiece.



●Slow boost stroke: driven by the boost cylinder at the rear to complete the stamping process.

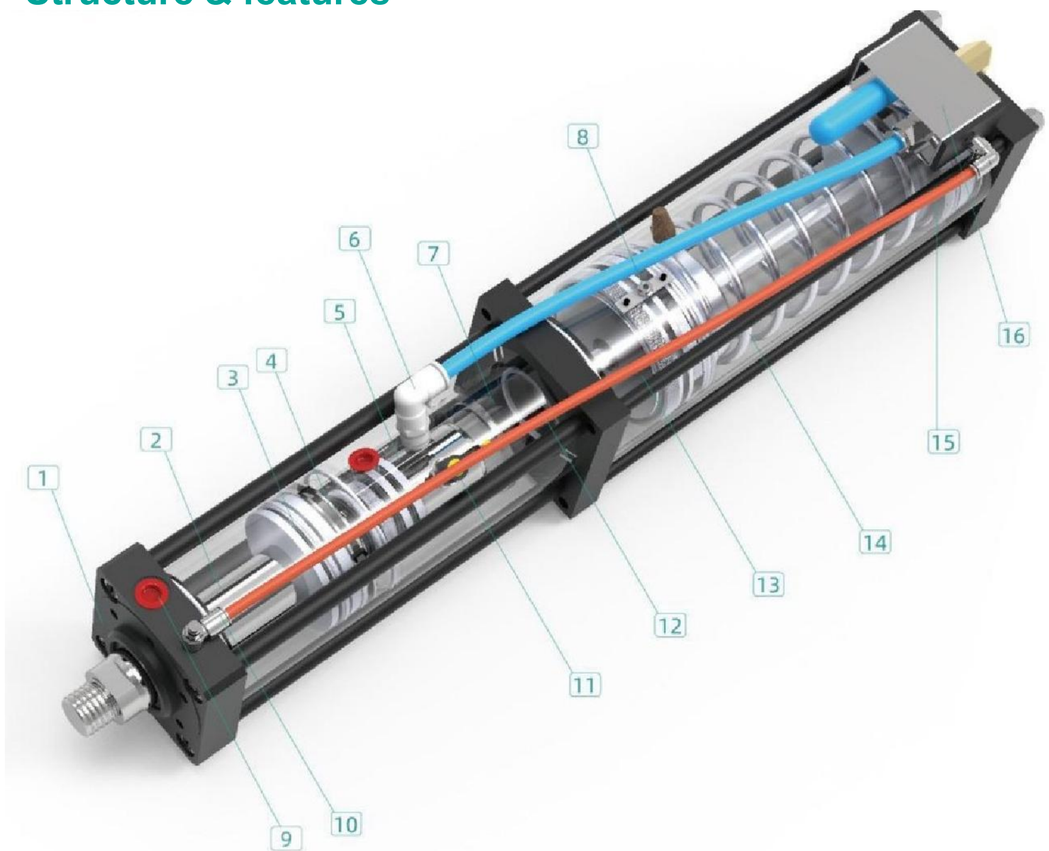


● Quick return stroke - pneumatic return of the front fast-forward cylinder and spring return of the rear booster cylinder.



●In the initial state, it can be installed at any angle of 360 degrees.

Structure & features

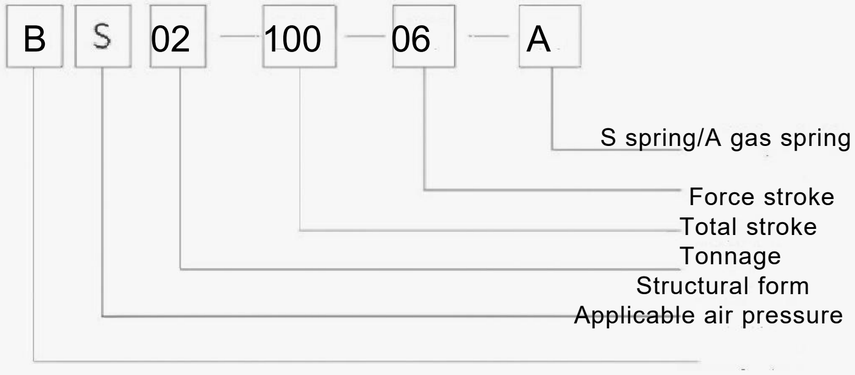


1. SIMITCH pneumatic hydraulic cylinder is equipped with high-precision guide sleeve and positioning mounting boss	9. Standardized pneumatic interface
2. Double-supported high-strength steel working spindle piston rod	10. X-regulating valve with adjustable boost speed
3. Excellent seals with patented sealing grooves to maintain long-term storage lubrication and increase service life	11. Integrated test interface
4. Piston cushion to reduce return noise	12. Integrated gas circuit
5. Double plunger cylinder sealing system design, gas and oil completely isolated exhaust structure	13. Constant pressure sealed oil storage chamber
6. Integrated internal gas path design	14. Double-head supported spring (or gas spring)
7. Bypass release buffer structure with overflow	15. Boost piston cushion to reduce noise
8. Oil storage chamber exhaust port	16. Integrated pneumatic hydraulic boost conversion valve

Key points for selecting pneumatic hydraulic cylinder

Cylinder model selection

Type, tonnage, total stroke, including boost stroke
B series can be used with a maximum of 6 bar compressed air
H series can be used with a maximum of 10 bar compressed air
S type is a series structure
T type is a parallel structure



Punch force: When the pressure of the driving compressed air is the maximum working pressure, the force on the working piston when the pneumatic hydraulic cylinder is in the boosting state, the unit is: KN

Total stroke: The maximum stroke that the working piston can move from the starting point to the end of the hydraulic boosting stroke, the unit is: mm, the total stroke already includes the boosting stroke

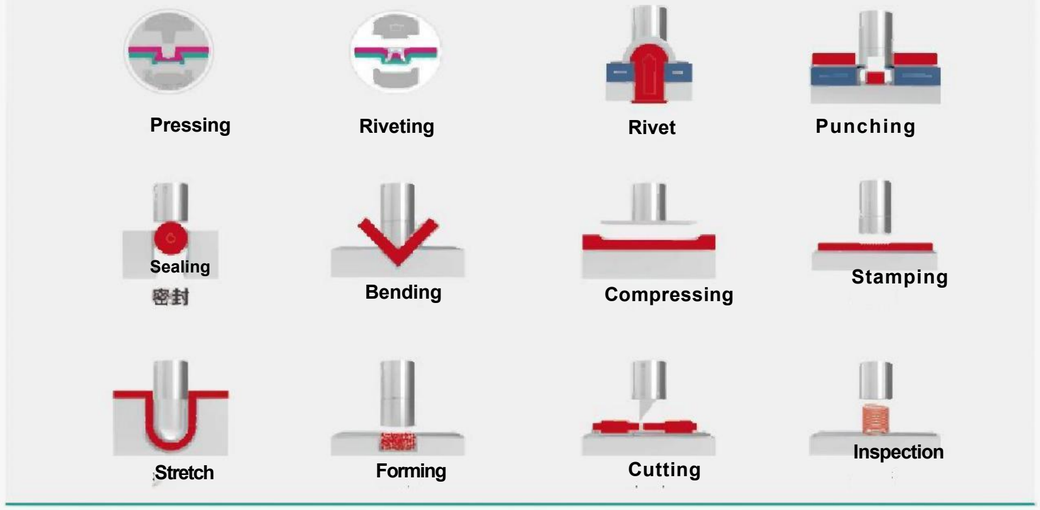
Force stroke: The maximum stroke that the pneumatic hydraulic cylinder can move in the boosting state, the unit is: mm

Fast stroke force: When the pressure of the driving compressed air is the maximum working pressure, the pneumatic hydraulic cylinder is in the fast forward state, the force on the working piston, the unit is: Kgf

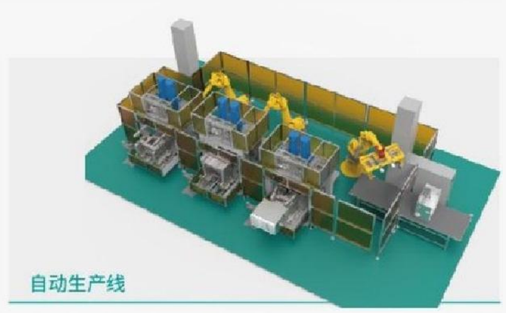
Fast return stroke force: When the pressure of the driving compressed air is the maximum working pressure, the pneumatic hydraulic cylinder is in the return state, the force on the working piston, the unit is: Kgf

Application

The pneumatic hydraulic is a complete drive system.
With a variety of designs and a comprehensive range of accessories, it is widely available and can be installed in any position, usually without the need for external tooling guidance.




自动铆接设备


自动生产线

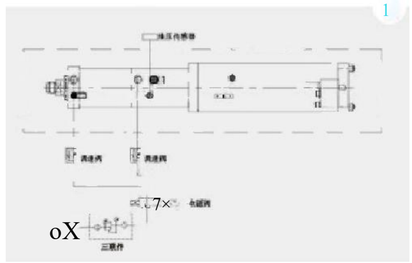

自动生产线

Comparison of pneumatic hydraulic & other transmission power

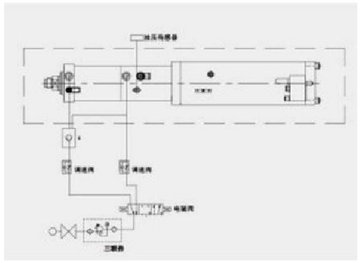
No.	Item name	Comparison	Cost	Work efficiency	Energy consumption flexibiliy		Appearance volume	Maintenance	Working environment Working range	
1	Mechanical	1. Traditional acquisition method; 2. Faster speed; 3. Complex design; 4. Difficult to change actions;	High	High	High	Inflexible	Large size	Difficult	Big noise	Limited
2	Hydraulic	1. Small cylinder size and high output; 2. Adjustable speed; 3. Smooth movement and shock absorption; 4. High degree of freedom in power transmission;	High	Low	High energy consumption	Flexible application	Hydraulic station is large	Difficult, need to replace filter element regularly, change oil regularly	Loud noise Waste oil discharge, high temperature	Wide range
3	Pneumatic	1. Compared with the same force, the volume is large; 2. The speed is adjustable and the speed is slow; 3. The movement is stable; 4. It is impossible to achieve a larger force;	Low	Low	High	Flexible	Small size	Easy, no wear	Loud exhaust noise	Wide range
4	Pneumatic hydraulic	1. Fast speed, low force, "soft contact" in place, with three-stroke action, self-adaptive force increase, no need for adjustment; 2. Faster speed than hydraulic pressure, more stable than air pressure; 3. Adjustable speed; 4. Convenient power source; 5. Simple control; 6. No leakage, no overheating;	Medium	High	Low	Flexible	Small size	Convenient, extremely low wear, usually only a small amount of oil replenishment is required	Low noise	Pressure stroke is limited
5	Servo	1. The latest pressure power source; 2. Easy to control; 3. High output force and displacement accuracy; 4. Adjustable speed; 5. It is difficult to obtain large force;	High	High	Low	Flexible	Small size	Convenient, no wear	Low noise	Wide range

Control method of pneumatic hydraulic cylinder

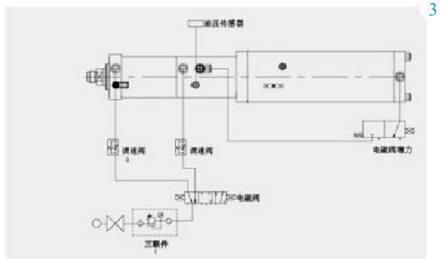
1



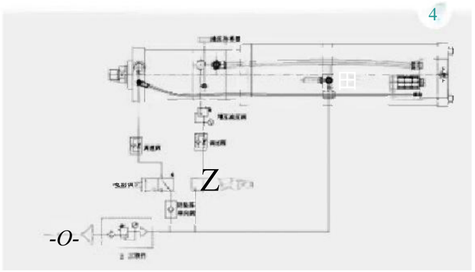
2



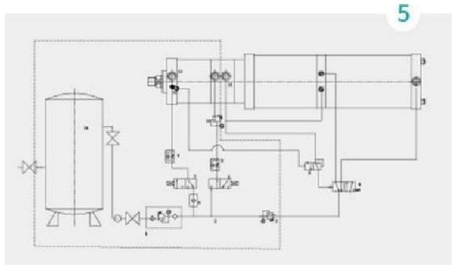
3



4



5



① Primary control mode

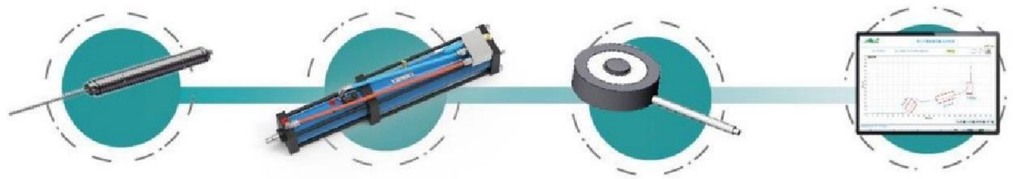
② With air-controlled one-way anti-falling valve

③ Fast forward and fast return, independent control with booster

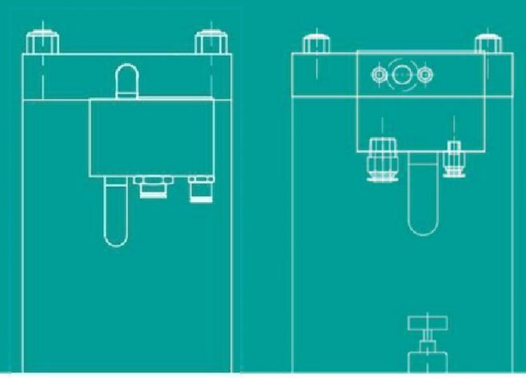
4 Suitable for 30-ton cylinder control with anti-falling one-way valve

⑤ Suitable for 50, 75, 100-ton cylinder control, with anti-falling one-way valve

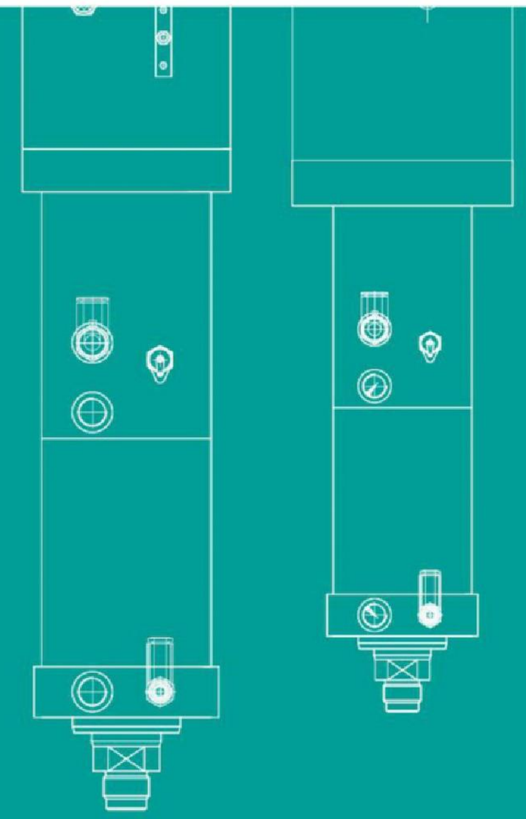
Data collection and processing method



Displacement sensor Pneumatic hydraulic cylinder Pressure sensor Data analysis and acquisition system



Pneumatic Hydraulic Cylinder Model Selection



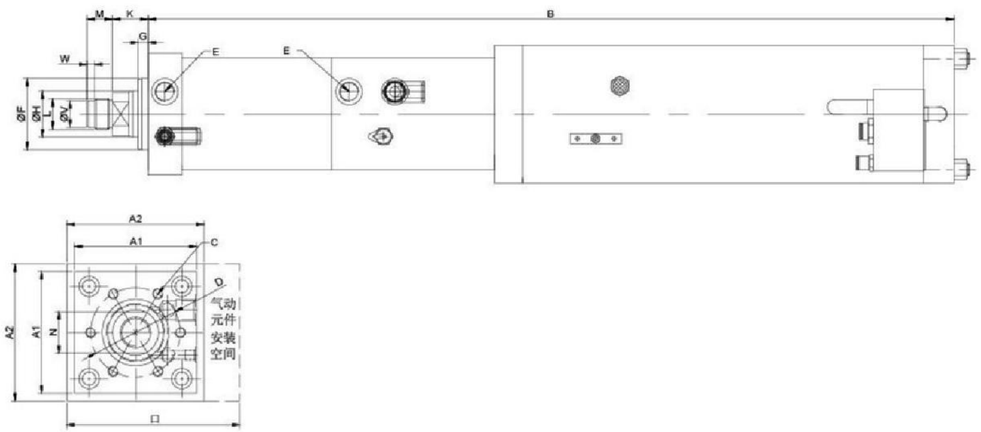
SIMITCH

BS series Pneumatic hydraulic cylinder

BS series Output coefficient table

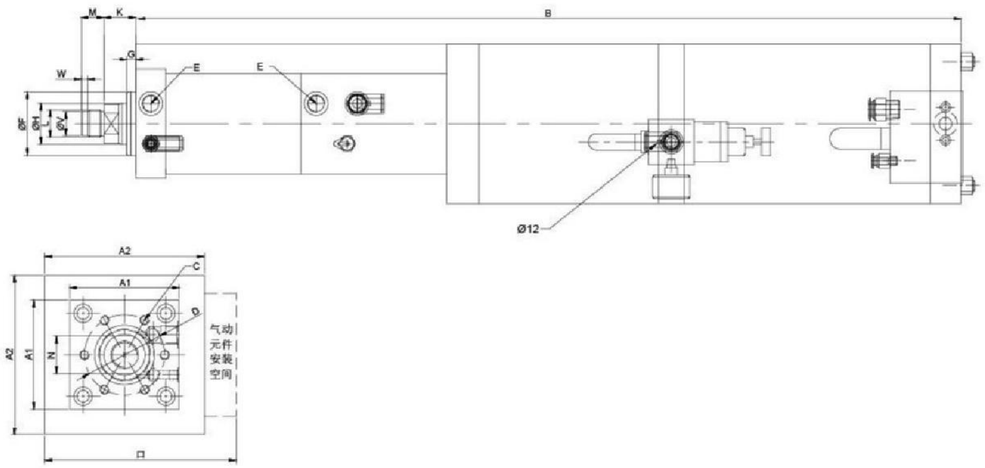
Model 型号	6bar input pressure KN	6 bar input quick stroke force	6 bar input return stroke force	Boost ratio	6 bar input max. Oil pressure bar
BS01-series	11	95	105	62	345
BS02-series	17	50	170	64	350
BS04-series	35	240	260	69	380
BS08-series	72	350	370	61	340
BS15-series	135	500	700	64	350
BS20-series	200	580	780	64	350
BS30-series	276	730	1000	64	350
BS50-series	476	1150	1700	61	340
BS75-series	736	2355	3780	51	280
BS100-series	970	2355	3780	69	380

BS series dimensions



BS series parameter Table

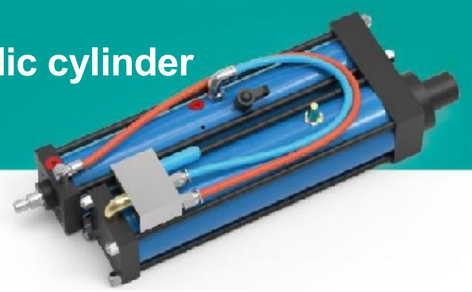
Model	A1	A2	B	C	D	E	Ff7)	G	H	K	L	M	N	O	U(g6)	V	Remark
BS01-100-12S	66	80	596	6-M6*12	40	G1/8	30	10	16	24	M12*1.5	15	13	110			Spring
BS01-200-12S	66	80	786	6-M6*12	40	G1/8	30	10	16	24	M12*1.5	15	13	110			Spring
BS01-100-24S	66	92	668	6-M6*12	40	G1/8	30	10	16	24	M12*1.5	15	13	135			Spring
BS01-200-24S	66	92	868	6-M6*12	40	G1/8	30	10	16	24	M12*1.5	15	13	135			Spring
BS02-100-12S	78	92	683	6-M08*15	54	G1/4	40	10	20	26	M16*1.5	15	17	135			Spring
BS02-200-125	78	92	883	6-M08*15	54	G1/4	40	10	20	26	M16*1.5	15	17	135			Spring
BS02-100-24S	78	112	714	6-M08*15	54	G1/4	40	10	20	26	M16*1.5	15	17	150			Spring
B502-200-24S	78	112	914	6-M08*15	54	G1/4	40	10	20	26	M16*1.5	15	17	150			Spring
BS04-100-12S	98	112	730	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	150	18	7	Spring
B504-200-125	98	112	937	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	150			Spring
BS04-100-24S	98	137	762	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	180	18	7	Spring
B504-200-24S	98	137	962	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	180			Spring
BS08-100-12S	120	137	792	5-M10*20	88	G1/2	70	10	45	35	M30*2	25	36	180	26	7	Spring
BS08-200-12S	120	137	1008	6-M10*20	88	G1/2	70	10	45	35	M30*2	25	36	180	26		Spring



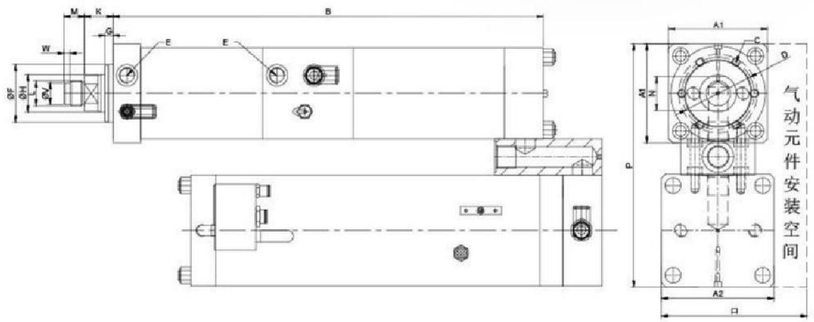
BS series parameter Table

Model	A1	A2	B	C	D	E	Ff7)	G	H	K	L	M	N	O	U(g6)	V	Remark
BS08-100-24A	120	177	872	6-M10*20	88	G1/2	70	10	45	35	M30*2	25	36	220			Gas spring
pS08-200-24A	120	177	1072	6-M10*20	88	G1/2	70	10	45	35	M30*2	25	36	220			Gas spring
BS15-150-12A	145	177	1044	6-M16*25	100	G1/2	75	15	50	36	M30*2	25	41	220			Gas spring
BS15-250-12A	145	177	1300	6-M16*25	00	G1/2	75	15	50	36	M30*2	25	41	220			Gas spring
BS15-150-24A	145	216	1114	6-M16*25	100	G1/2	75	15	50	36	M30*2	25	41	270			Gas spring
BS15-250-24A	145	216	1314	6-M16*25	100	G1/2	75	15	50	36	M30*2	25	41	270			Gas spring
BS20-150-12A	166	177	1110	6-M20*30	115	G1/2	85	18	56	52	M39*2	35	46	220			Gas spring
BS20-250-12A	166	216	1359	6-M20*30	115	G1/2	85	18	56	52	M39*2	35	46	270			Gas spring
BS30-150-12A	190	216	1135	6-M20*30	132	G3/4	100	18	63	47	M39*2	35	55	270			Gas spring
BS30-250-12A	190	216	1385	6-M20*30	132	G3/4	100	18	63	47	M39*	35	55	270			Gas spring
BS50-200-12A	190	268	285	8-M20*35	50	G3/4	115	25	63	56	M42*2	40	55	330			Gas spring
BS75-200-12A	315		1629	12-M24*45	200	G1	150	20	100	60	M64*2	60	85	380			Gas spring
BS100-200-12A	315	332	1643	2-M24*45	200	G1	150	20	100	60	M64*2	60	85	380			Gas spring

BT series pneumatic hydraulic cylinder



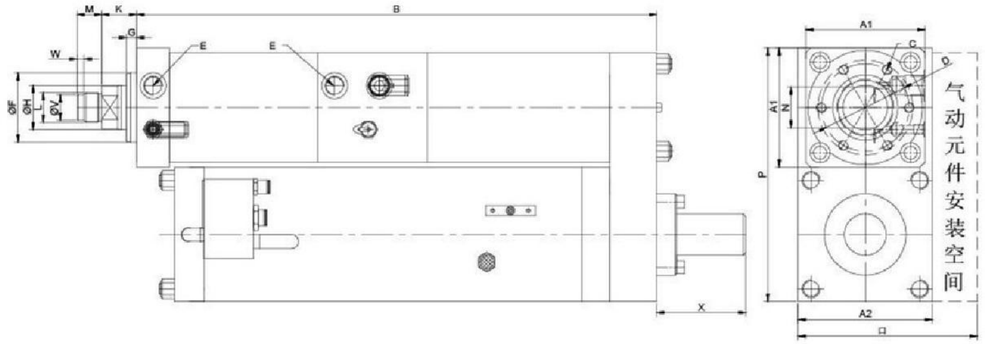
BT series dimensions



BT series parameter Table

Model	A1	A2	B	C	D	E	Ff7)	G	H	K	L	M	N	O	P	X	Remark
BT01-200-12S	66	B0	514	6-M6*12	40	G1 /8	30	10	16	24	M	15	13	10	60	60	Spring
BT01-200-24S	66	92	514	6-M6*12	40	G1/8	30	10	16	24	M12*1.5	15	13	135	162	100	Spring
BT02-200-125	78	92	529	6-M08*15	54	G1/4	40	10	20	26	M16*1.5	15	17	135	176	60	Spring
BT02-200-24S	78	112	529	5-M08*15	54	G1/4	40	10	20	26	M16*1.5	15	17	150	193	100	Spring
BT04-200-12S	98	112	551	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	150	210	100	Spring
BT04-300-125	98	112	751	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	150	210	100	Spring
BT04-200-24S	98	137	551	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	180	235	100	Spring
BT04-300-24S	98	137	751	5-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	180	235	100	Spring
BT08-200-125	120	137	585	6-M10*20	88	G1/2	70	10	45	35	M30*2	25	36	180	260	100	Spring

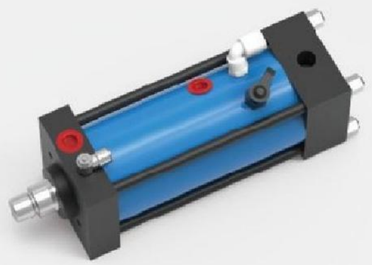
BT series dimensions



BT series parameter Table

Model	A1	A2	B	C	D	E	Ff7)	G	H	K	L	M	N	O	P	X	Remark
BT08-300-12A	120	137	791	6-M10*20	88	G1/2	70	10	45	35	M30*2	25	36	180	301		Gas spring
BT15-250-12A	145	177	713	6-M16*25	100	G1/2	75	15	50	36	M30*2	25	41	220	366		Gas spring
BT15-250-24A	145	216	713	6-M16*25	100	G1/2	75	15	50	36	M30*2	25	41	270	405		Gas spring
BT20-250-12A	166	216	726	6-M20*30	115	G1/2	85	18	56	52	M39*2	35	46	270	426		Gas spring
BT30-250-12A	190	216	740	6-M20*30	132	G3/4	100	18	63	47	M39*2	35	55	270	452		Gas spring
BT50-200-12A	190	268	771	8-M20*35	150	G3/4	115	25	63	56	M42*2	40	55	330	574		Gas spring
BT75-200-12A	315	332	864	2-M24*45	200	G1	150	20	100	60	M64*2	60	85	380	722		Gas spring
BT100-200-12A	315	332	864	12-M24*45	200	G1	150	20	100	60	M64*2	60	85	380	722		Gas spring

Split combination pneumatic hydraulic cylinder



AT系列

HMPS系列

HZ系列

Applicable to compact working space or multiple working cylinders working at the same time, the whole gas-liquid booster cylinder is decomposed into two units for combination:

1. Working cylinder (AT series, HZ series)
2. Driving booster (boost ratio 69MPS series, boost ratio 39HMPS series)

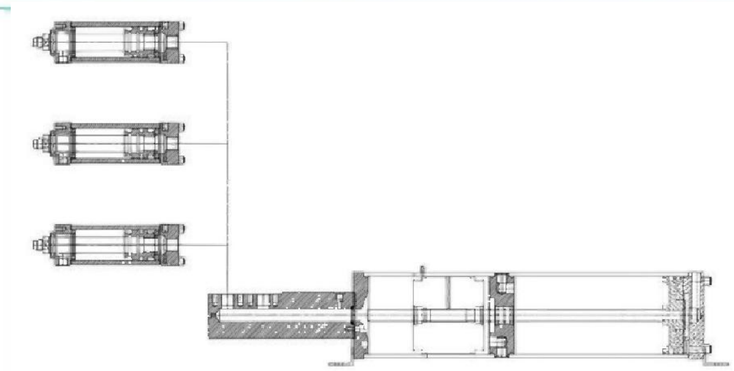
·AT series working cylinder

Can realize pneumatic fast forward and pneumatic fast return, and the booster will provide high-pressure oil to achieve work when in place; it is completely consistent with the control of standard gas-liquid booster cylinder.

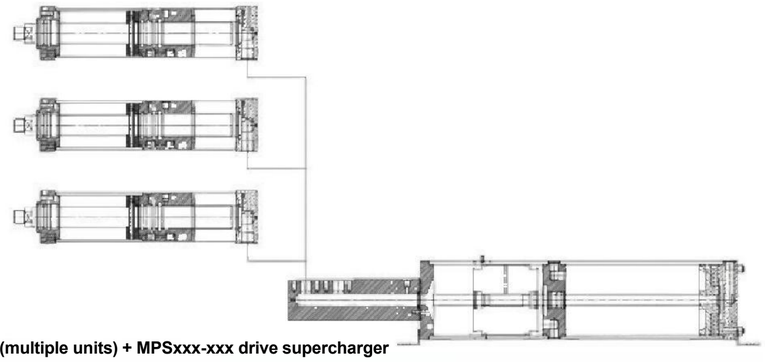
·HZ series working cylinder

Special oil cylinder design requires booster to drive low-pressure oil to achieve fast forward action, and booster will provide high-pressure oil to achieve work when in place.

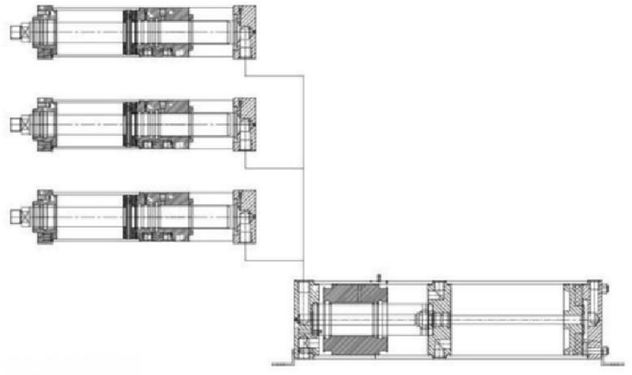
Schematic diagram of split working cylinder



HZ working cylinder (multiple units) + HMPSxxx-xxx driving supercharger

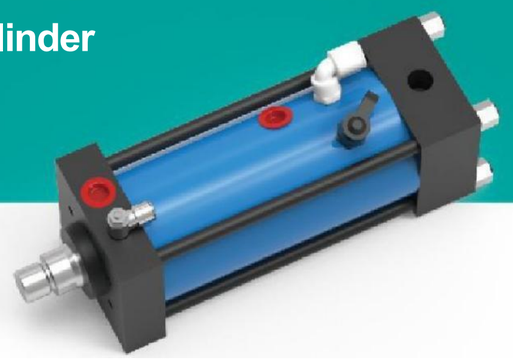


AT working cylinder (multiple units) + MPSxxx-xxx drive supercharger

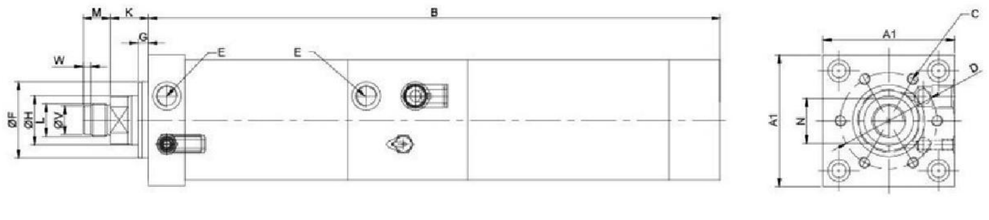


AT working cylinder (multiple units) + TMPSxxx-xXX drive booster

AT series split working cylinder



AT series dimensions



AT series parameter Table

Model	Input oil pressure 400bar Output punching pressure KN	6bar output quick stroke force Kg	6bar output return force Kg	V (driven by MPS, high pressure oil volume CC required for each 1mm of driving)	V1 (Oil loss CC per 50mm total stroke)	V2 (force boost stroke, oil pipe length per 100 CC oil loss)	Remark (Oil Pipe Configuration)
AT01series	13.00	95.00	105.00	0.31	0.55	0.40	3 point two-layer steel wire high-pressure oil pipe
AT02series	21.00	150.00	170.00	0.49	0.70	0.70	3 point two-layer steel wire high-pressure oil pipe
AS04series	4200	240.00	260.00	1.02	1.65	0.70	4 point four-layer steel wire high-pressure oil pipe
AT08series	81.00	350.00	370.00	1.95	3.50	0.90	4 point four-layer steel wire high-pressure oil pipe
AT15series	158.00	500.00	700.00	3.85	5.00	2.00	4 point four-layer steel wire high-pressure oil pipe
AT20series	200.00	580.00	780.00	5.67	1000	2.00	6point four-layer steel wire high-pressure oil pipe
AT30series	320.00	730.00	1000.00	7.85	15.50	2.00	6 point four-layer steel wire high-pressure oil pipe
AT50series	498.00	1150.00	1700.00	12.27	18.50	3.10	1 inch four-layer steel wire high pressure oil pipe
AT100-series	1030.00	2355.00	3780.00	25.45	36.50	3.10	1 inch four-layer steel wire high pressure oil pipe

Corresponding to the change of working cylinder stroke

Model	A1	B	C	D	E	Ff7)	G	H	K	L	M	N	X	Remark
AT01-100	66	320	6-M6*12	40	G1/8	30	10	16	24	M12*1.5	15	13	G3/8	
AT02-100	78	339	6-M08*15	54	G1/4	40	10	20	26	M16*1.5	15	17	G1/2	
AT04-100	98	355	6-M08*18	64	G3/8	50	10	30	29	M22*2	20	24	G1/2	
AT08-100	120	391	6-M10*20	88	G1/2	70	10	45	35	M30*2	25	36	G3/4	
AT15-100	145	413	6-M16*25	100	G1/2	75	15	50	36	M30*2	25	41	G3/4	
AT20-100	166	427	6-M20*30	115	G1/2	85	18	56	52	M39*2	35	46	G3/4	
AT30-100	190	446	6-M20*30	132	G3/4	100	18	63	47	M39*2	35	55	G1	
AT50-100	190	471	8-M20*35	150	G3/4	115	25	63	56	M42*2	40	55	G1-1/4	
AT100-100	315	556	12-M24*45	200	G1	150	20	100	60	M64*2	60	85	G1-1/4	

HZ系列分体工作缸

HZ系列分体工作缸尺寸图

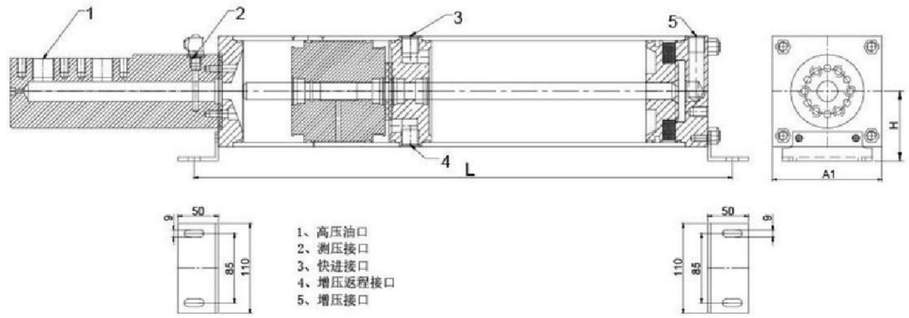
Model	Working cylinder diameter(mm)	Input oil pressure 250bar Output punching pressure KN	6bar output fast forward stroke force Kg	6bar output return stroke force Kg	V (driven by MPS, high pressure oil volume CC required for each 1mm of driving)	V1 (Oil loss CC per 50mm total stroke	V2 (force boost stroke, oil pipe length per 100 CC oil loss)	Remark (Oil Pipe Configuration)
HZ05 series	50.00	48.00	115.00	90.00	2.00	2.20	0.50	4 points two-layer steel wire high-pressure oil pipe
HZ07 series	63.00	76.00	185.00	130.00	3.10	3.40	0.60	4 points two-layer steel wire high-pressure oil pipe
HZ11 series	80.00	108.00	260.00	210.00	4.40	4.90	0.60	6 points four-layer steel wire high-pressure oil pipe
HZ19 series	100.00	192.00	465.00	350.00	7.90	8.60	0.70	6 points four-layer steel wire high-pressure oil pipe
HZ29 series	125.00	300.00	720.00	580.00	12.30	13.50	0.70	6 points four-layer steel wire high-pressure oil pipe
HZ48 series	160.00	492.00	1182.00	887.00	20.10	22.00	0.70	1 inch four-layer steel wire high-pressure oil pipe

Corresponding to the change of working cylinder stroke

Model	A1	B(according to the change of stroke)	C	D	E	F(f7)	G	H	K	L	M	N	V	W	X	Remark
HZ05-100	67	240+(stroke-100)	6-M8*15	54	G3/8	40	10	25	25	M16*1.5	22	19	12	7	G1/2	
HZ07-100	85	255+(stroke-100)	6-M8*15	65	G3/8	52	10	35	25	M22*2	20	17	18	7	G3/4	
HZ11-100	112	265+(stroke-100)	6-M10*20	88	G1/2	70	10	45	35	M30*2	25	36			G3/4	
HZ19-100	128	275+(stroke-100)	6-M16*25	100	G1/2	75	10	50	30	M30*2	25	41			G3/4	
HZ29-100	160	290+(stroke-100)	6-M20*30	115	G3/4	80	15	56	47	M39*2	35	46			G1	
HZ48-100	200	320+(stroke-100)	8-M20*30	150	G3/4	115	18	70	52	M42*2	40	60			G1	

MPS/HMPS series

Driving supercharger



MPS series parameter Table

Model	Input 6 bar air pressure output high oil pressure bar	Fast forward 6 bar air pressure output low pressure oil CC	Output high pressure oil volume CC under supercharged state	A1	H	B	L1	L	Pneumatic interface	Hydraulic interface	Remark
MPS100.60.30	400	470	30	112	85	625	281	681	G1/2	G3/4	
MPS125.60.50	400	790	50	137	98.5	612	256	668	G1/2	G3/4	
MPS160.60.100	400	1800	100	177	118.5	720	298	776	G3/4	G3/4	
MPS200.60.180	400	2800	180	216	138	836	386	892	G1	G3/4	
MPS250.60.265	400	6600	265	268	159	921	361	977	G1	G1	
MPS300.60.390	400	10000	390	332	196	1125	450	1200	G1	G1-1/4	

HMPS: boost ratio 39, input 6 bar air pressure output oil pressure 230 bar; suitable for driving HZ series working cylinders.

HMPS Series Parameter Table

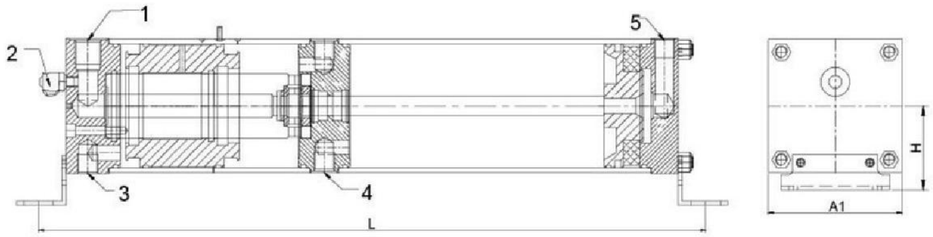
Model	Input 10 bar air pressure Output high oil pressure bar	Fast forward 6 bar air pressure output low pressure oil CC	Output high fuel volume CC under supercharged state	A1	H	B	L1	L	Pneumatic interface	Hydraulic interface	Remark
HMPS100.100.50	400	470	50	112	85	625	281	681	G1/2	G3/4	230
HMPS125.100.78	400	790	78	137	98.5	612	256	668	G1/2	G3/4	230
HMPS160.100.134	400	1800	134	177	118.5	720	298	776	G3/4	G3/4	230
HMPS200.100.284	400	2800	284	216	138	836	386	892	G1	G3/4	230
HMPS250.100.395	400	6600	395	268	159	921	361	977	G1	G1	230
HMPS300.100.650	400	0000	650	332	96	125	450	1200	G1	G1-1/4	230

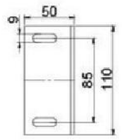
HMPS: boost ratio 39, input 6 bar air pressure output oil pressure 230 bar; suitable for driving HZ series working cylinders.

TMPS series

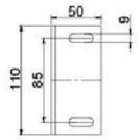
Driving supercharger

The boost ratio is 69, the input air pressure is 6 bar and the output oil pressure is 400 bar; it is suitable for driving AT series working cylinders.





1、高压油口
2、测压接口
3、快进接口
4、增压返程接口
5、增压接口



TMPS Series Parameter Table

Model	Input 6bar pressure Input high oil pressure bar	Fast forward 6 bar air pressure; Output low pressure oil volume CC	Under supercharging condition, high pressure oil output CC	A1	H	B	L1	L	Pneumatic interface	Hydraulic interface	Remark
TMPS12516.803.36	400	803	36	137	98.5	632		688	G1/2	G3/4	
TMPS16020.1462.72	400	1462	72	177	118.5	692		646	G1/2	G3/4	
TMPS20025.2360.137	400	2360	137	216	138	771		827	G3/4	G3/4	
TMPS25032.4795.300	400	4795	300	268	159	1027		1083	G1	G1	

Requirements for split cylinders

No.	Structure	Total stroke	Pressure stroke requirements	Oil outlet requirements	Tubing length requirements	Remark
1	AT	B	L1	01 Rear oil outlet	M1	
2	HZ	B	L1	02 Side oil outlet	M1	

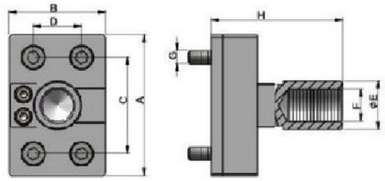
AT split cylinder selection example	
Requires 2 60KN forces, 130mm stroke, 12mm pressure stroke, side oil outlet structure, synchronous action, oil pipe length 1200mm, optional supercharger	
1	AT08 can output 81KN at a maximum oil pressure of 400bar; if it meets the requirements, the corresponding supercharger needs to choose the MPS series, 6bar air pressure, and a maximum oil pressure of 400bar
2	A1 stroke 130mm; choose 150mm stroke; the fast stroke of 2 cylinders requires low-pressure oil volume = 2*150*V(1.96CC)*&(safety oil storage coefficient 1.5)=882CC
3	A2 fast stroke is affected by the length of the oil pipe, and the loss of low-pressure oil volume = (1200/50)*V1(3.5CC)=84CC
4	Aº comprehensive required low-pressure oil volume = 882CC+84CC=966CC
5	B1 pressure stroke 12mm, 2 required high-pressure oil volume = 2*12*V(1.96CC)=47.04
6	B2 boost stroke affected by oil pipe length High pressure oil loss = 2*(1200/100)*V2(0.9CC)=21.6CC
7	B0 comprehensive required high pressure oil = 47.04CC+21.6CC=68.64CC
8	Matching result: working cylinder: AT08-150-02 quantity 2, driving supercharger: MPS160.60.100, high pressure oil pipe: VH04-1200 quantity 2

HZ split cylinder selection example	
Requires 2* 60KN forces, stroke 130mm, pressure stroke 12mm, side oil outlet structure, synchronous action, oil pipe length 1200mm, optional supercharger	
1	HZ07 can output 76KN at a maximum oil pressure of 250bar; if the conditions are met, the corresponding supercharger should be selected from the HMPS series, 6bar air pressure, and a maximum oil pressure of 250bar.
2	A1 stroke is 130mm; select 150mm stroke; the fast stroke of 2 cylinders requires low-pressure oil volume = 2*150*V(3.1CC)*&(safety oil storage coefficient 1.5)=1395CC
3	A2 fast-moving stroke is affected by the length of the oil pipe. Low-pressure oil loss = (1200/50) * V1 (3.1CC) = 74.4CC
4	A0 comprehensive required low pressure oil volume = 1395CC + 74.4CC = 1469.4CC
5	B1 pressure stroke 12mm, 2 required high pressure oil volume = 2*12*V(3.1CC) = 74.4
6	B2 boost stroke is affected by the length of the oil pipe. High pressure oil loss = 2*(1200/100)*V2(0.6CC)=14.4CC
7	BO comprehensive required high pressure oil volume = 74.4CC + 14.4CC = 88.8CC
8	Selection result: Working cylinder: HZ07-150-02, quantity 2, Driving supercharger: HMPS160.100.134, High-pressure oil pipe: LH06-1200, quantity 2

Pneumatic hydraulic cylinder common auxiliary parts

Ball joint adapter

Used to connect the cylinder and the mold; the middle ball head transition, the hard plate bears the force, eliminating the lateral force and preventing the piston rod from being subjected to lateral force



Capacity	Model	A	B	C	D	E	F	G	H
2ton	SMTZWK02-00	64	44	43.5	22	22	M16*1.5	M6	60
4ton	SMTZWK04-00	74	52	52.5	30	30	M22*2	M8	70
8ton/15ton	SMTZWK08-00	98	74	72	44	45	M30*2	M10	70
20ton/30ton	SMTZWK030-00	120	84	89	52	56	M39*2	M12	110
50ton	SMTZWK050-00	120	84	92.5	56	63	M42*2	M12	140

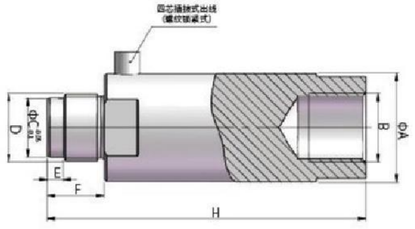
Special force sensor

Used for external piston rod output measuremen

Strain gauge pressure signal output

Signal output: 0-24mv; 0-24mA

Order number: SMT-PLED-*** (tonnage)



Capacity	Model	A	B	C	D	E	F	H
5ton	SMTZPS-05T	30	M22*2		M22*2		20	110
8ton/15ton	SMTZPS-15T	48	M30*2	26	M30*2	7	25	140
20ton/30ton	SMTZPS-20T	56	M39*2		M39*2		35	165

Special seal repair kit

For SMT pneumatic hydraulic cylinder

Order No.: SMT-SR-***-BS

Oil pressure sensor

Measuring range 0-400bar;

Used to measure the internal oil pressure of the booster cylinder;

Electrical signal output, precise control of the booster cylinder action;

Dual-channel switch signal

Order No.: PN7070

Special grease gun

Oil storage capacity:360cm³;

Order No.:ZP1/100

Displacement sensor

Used for external slider displacement measurement Non-contact measurement

Signal output: 0-24mv; 0-24mA

Order No.:SMT-DISS-150(Special stroke negotiable)

Two-hand start operation switch

Start-up method meet

European protection

standards

Order No.:SMT-STE-02H-BX

Gas spring

Order No.:SMT-AIRB-03

Changeover valve

Order No.:SMT-AIRVL-**

Pressure hose

Measuring range 0-400bar

Order No.:ZHM-630mm

Special oil pressure gauge

Measuring range 0-400bar;

Used to measure the internal oil pressure of the cylinder;

The pointer displays the oil pressure value;

Order No.: ZM01-40, lateral oil inlet

ZM02-40, axial oil inlet

Pressure displacement monitor

Pressure signal, displacement signal input

Process data acquisition, curve signal output

Dynamic judgment process

Ordering conditions:

1. Bus type

2. X\Y channel type

Order No.: B-*-*-07-101

Mechanical gas line dewatering valve

Order No.:ADTOR-04

With drain valve triplex

Order No.:SMT-ACRB-04

Widely application of pneumatic hydraulic cylinder

Floor type PC Series

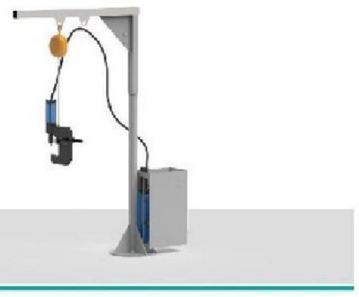
C-type bench-top
press machine
CEB Series

MA four column press
machine

MB two column press machine

CEU Universal type
clinching
machine

C-frame floor type
CEJ series

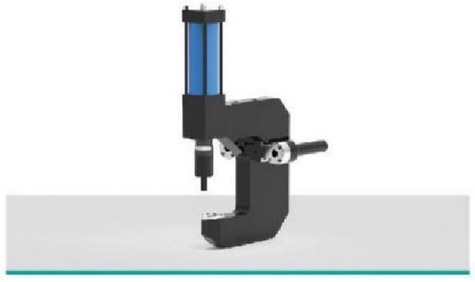


Handheld Clinching tong A

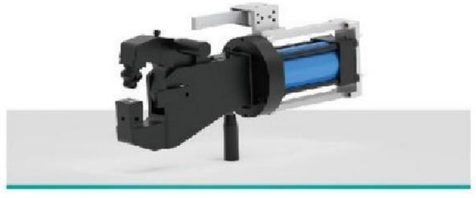
Handheld Clinching tong B

CEC Universal type
clinching
machine

SIMIT-TCEU air duct clinching machine



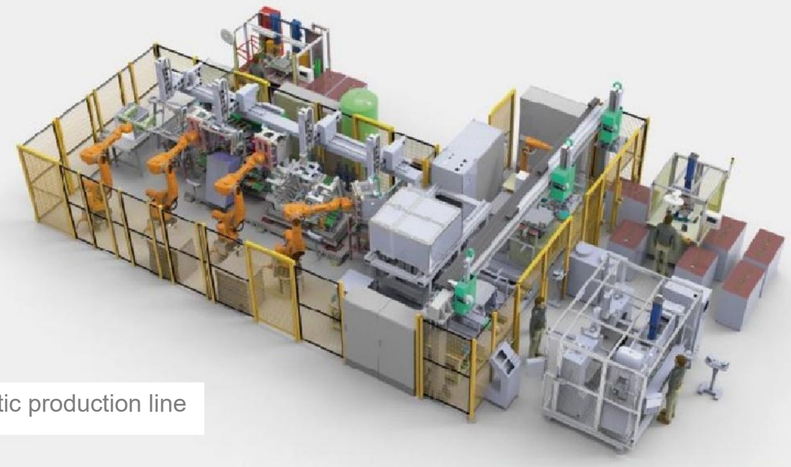
C-type clinching tong



X-type clinching tong

Widely Applications of Pneumatic Hydraulic Cylinder in Industrial Production

Automatic press machine



Automatic production line

Automatic production line

Automatic production line