



NPM series Boosting Unclamping cylinder

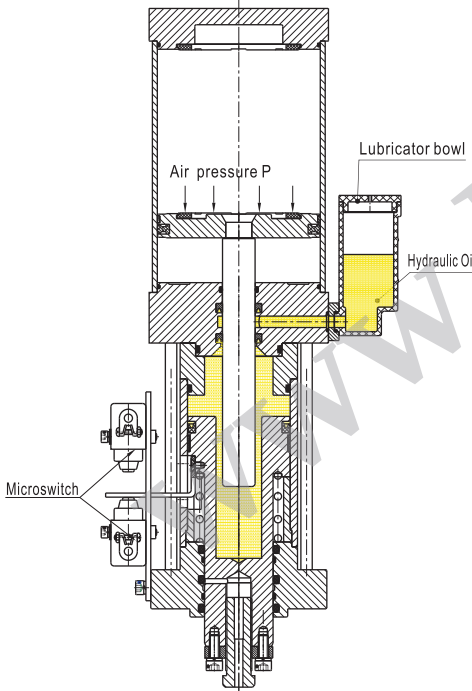
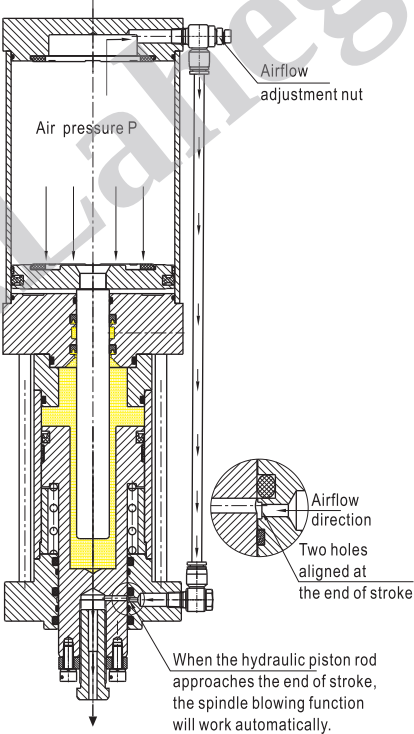
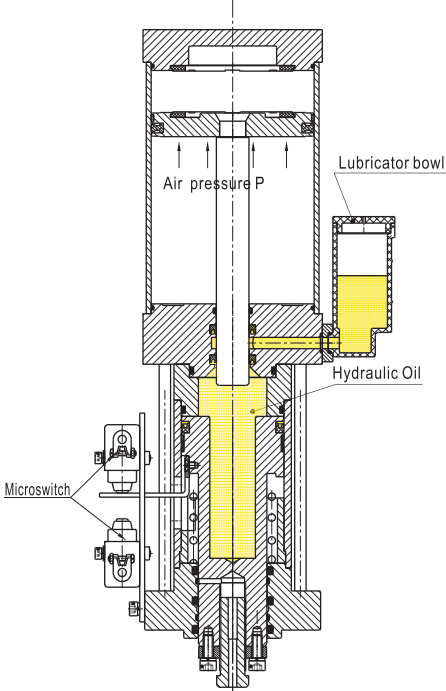
Product series

Series name		Acting type	Specification
NPM series		Hydraulic side: Single-acting Pneumatic side: Double-acting	3.5T 4.5T 6.0T



Page 380

Operating processes

Boosting process	The spindle blowing process	Restoration process
		

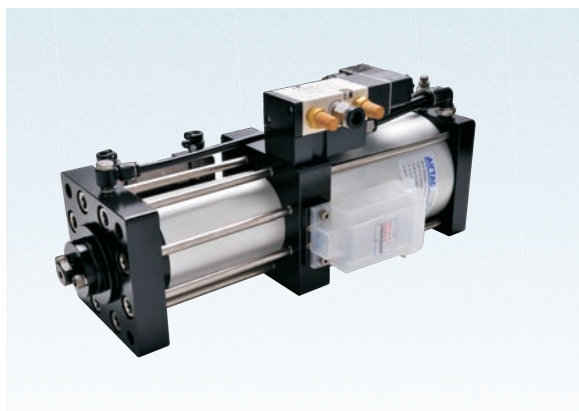
Note:
Two microswitches are used to define the stroke of boosting unclamping cylinder.



Boosting Unclamping cylinder

NPM series

Airtac



Specification

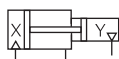
Specification	3.5T	4.5T	6.0T
Acting type	Hydraulic side: single acting Pneumatic side: double acting		
Fluid	Air (filtered by 40 μm filter element)		
Operating pressure	0.5MPa~0.8MPa(72~115psi)(5~8bar)		
Proof pressure	1.0MPa(143psi)(10bar)		
Ambient temperature	-5~60°C		
Port size	3/8"		
Boosting force @ 0.6MPa	3.5T	4.5T	5.7T
Weight	7Kg	7.5Kg	9.5Kg

Ordering code

There are four types of boosting unclamping cylinder. The microswitch, voltage and electrical connection mode are optional.

NPM 35T 63 × 13 A ☐ ☐

Symbol



Product feature

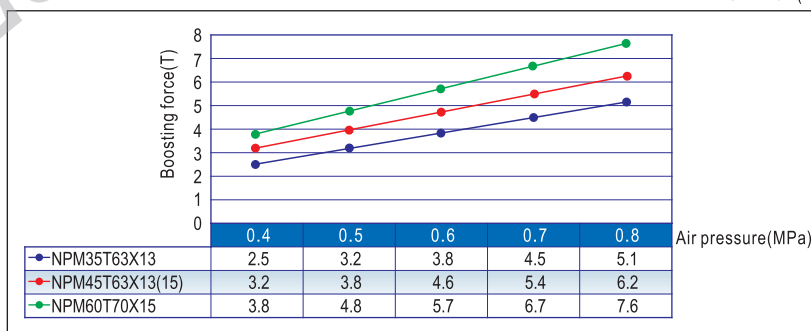
1. Special sealing materials can avoid the leakage of hydraulic cylinder.
2. Special surface treatment on the inner cylinder wall can improve resistance to wear and corrosion.
3. With spindle blowing function.

Specification	Model	Boosting force	Hydraulic bore size X stroke	Microswitch	Electrical connection mode	Standard voltage
NPM 35T 63X13	NPM: Boosting Unclamping cylinder	35T: 3.5T	63X13: Hydraulic bore size 63mm; stroke 13mm	Blank: Without microswitch L: With two microswitches	Blank: DIN terminal I: Grommet	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V
NPM 45T 63X13		45T: 4.5T	63X15: Hydraulic bore size 63mm; stroke 15mm			
NPM 45T 63X15		60T: 6.0T	70X15: Hydraulic bore size 70mm; stroke 15mm			
NPM 60T 70X15						

Note: The model of solenoid valve is 4M310.

Theoretical boosting force curves

Unit: Ton (T)



Installation and application

1. The fixing plate of the boosting unclamping cylinder should be perpendicular to the spindle axis. (Allowable perpendicularity error ≤ 0.05mm/100mm).
2. Recommend using ISO VG32 anti-wear hydraulic oil. In addition, the oil level should be kept within the specified range.



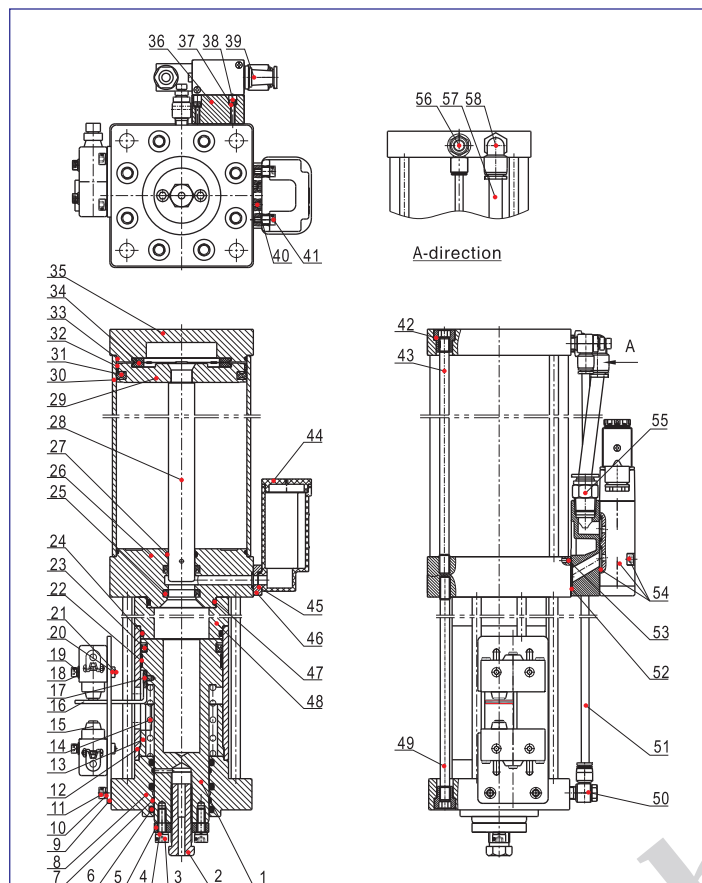
NPM



Boosting Unclamping cylinder

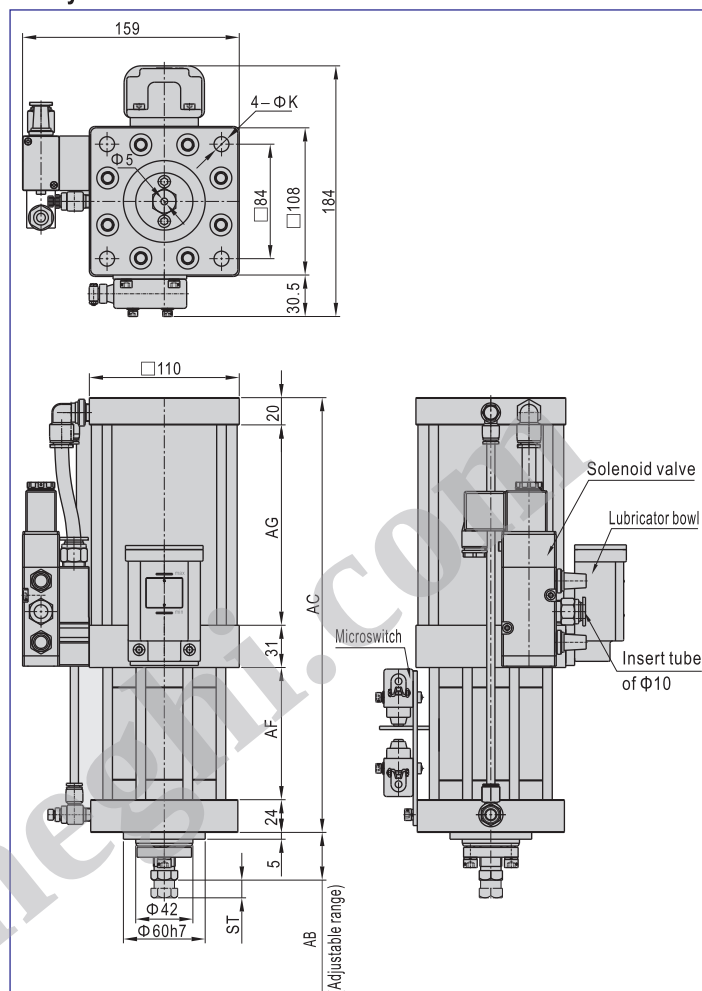
NPM series

Inner structure



NO.	Name	Material	NO.	Name	Material
1	Hydraulic piston - piston rod	Carbon steel	31	Piston O-ring	NBR
2	Booster bolt	Alloy steel	32	Wear ring	Wear-resistant material
3	Hexagon socket cap head screw	Medium (Low) carbon steel	33	O-ring	NBR
4	Spring washer	Spring steel	34	Bumper pad	TPU
5	Backing ring	Steel	35	Back cover	Aluminum alloy
6	O-ring	NBR	36	Connection block	Aluminum alloy
7	Wear ring	Wear-resistant material	37	Spring washer	Spring steel
8	Front cover	Aluminum alloy	38	Hexagon socket cap head screw	Medium (Low) carbon steel
9	Mounting plate of limit switch	Cool rolled plate	39	Universal silencer	
10	Spring washer	Spring steel	40	Hexagon socket cap head screw	Medium (Low) carbon steel
11	Hexagon socket cap head screw	Medium (Low) carbon steel	41	Hexagon socket cap head screw	Medium (Low) carbon steel
12	Large steel tube	Low carbon steel	42	Tie-rod nut	Medium (Low) carbon steel
13	Small steel tube	Low carbon steel	43	Tie-rod	Medium carbon steel
14	Spring	Spring steel	44	Lubricator bowl (NPM35T63-012)	Plastic
15	Microswitch(NPM35T63-024)		45	O-ring	NBR
16	L-shape bracket	Cool rolled plate	46	Lubricator bowl fixing plate	Aluminum alloy
17	Hexagon socket countersunk head screw	Medium (Low) carbon steel	47	O-ring	NBR
18	Gasket	Stainless steel	48	Stroke adjusting sleeve	Aluminum alloy
19	Spring washer	Spring steel	49	Hydraulic cylinder tie-rod	Medium carbon steel
20	Screw locking plate	Cool rolled plate	50	Universal male elbow (PH601D)	
21	Hexagon socket cap head screw	Medium (Low) carbon steel	51	PU tube 1 (US98A060040 BK)	Plastic
22	Wear ring	Wear-resistant material	52	O-ring	NBR
23	Special shape O-ring	TPU	53	Steel column	Stainless steel
24	O-ring	NBR	54	Solenoid valve assembly (4M31010 BK)	
25	Special shape O-ring	TPU	55	Straight connector(PC1003D)	
26	Middle cover	Aluminum alloy	56	Exhaust throttle fitting (PSL601AD)	
27	Special shape O-ring	NBR	57	PU tube 2 (US98A100065 BK)	Plastic
28	Piston rod	Medium carbon steel	58	L-shaped male elbow (PL1002D)	
29	Piston	Aluminum alloy			
30	Aluminum tube	Aluminum alloy			

Key Dimensions



Specification	Air supply pressure	Boosting force	Boosting stroke ST	AB (Adjustable range)	AC	AF	AG	K
NPM35T63X13	0.6MPa	3.5T	13 mm	28~42 mm	341	117	149	11
NPM45T63X13	0.6MPa	4.5T	13 mm	28~42 mm	386	139	172	11
NPM45T63X15	0.6MPa	4.5T	15 mm	26~40 mm	426	159	192	13
NPM60T70X15	0.6MPa	5.7T	15 mm	26~40 mm	496.5	194	227.5	13



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