

 **Prona**[®]

R-2200AC

**AIR-ASSISTED SPRAY GUN
OPERATING INSTRUCTION**



IMPORTANT: Before assembly and start-up, please read and clearly understand all the documents relating to this equipment (professional use only).



Maquinaria de Pintura
Repuestos y Accesorios

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Servicio Técnico Oficial

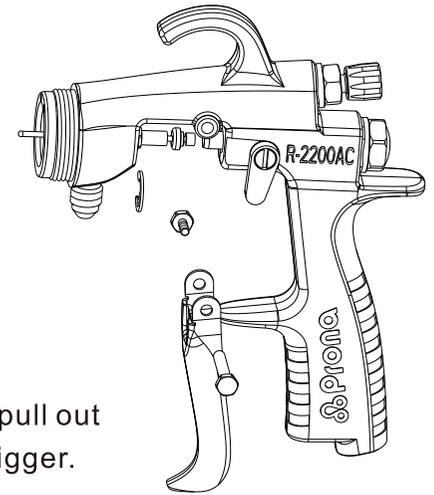
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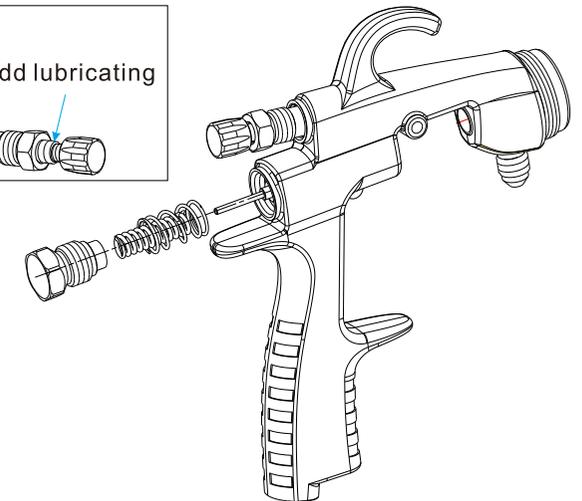
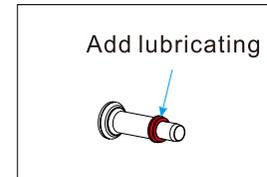
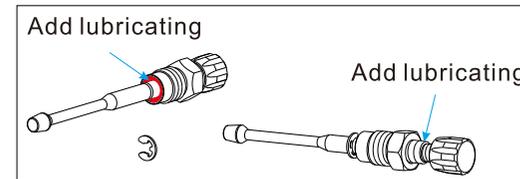


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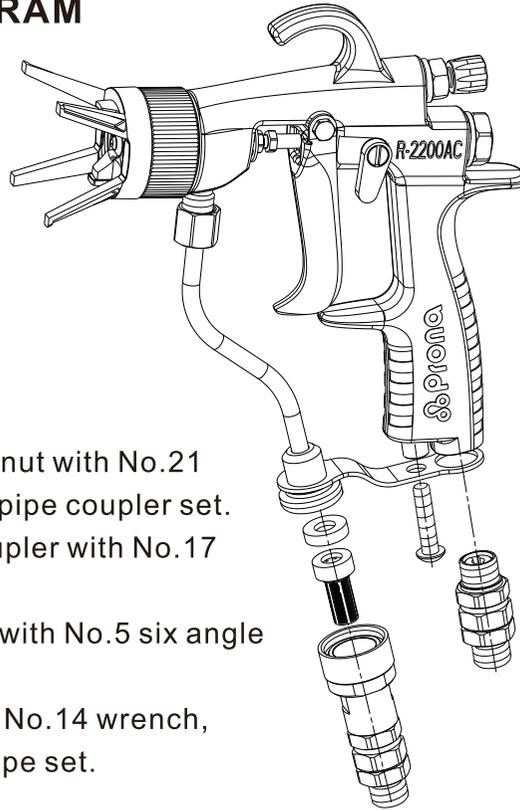


8. Screw off the trigger stud screw, pull out the trigger stud and remove the trigger.
9. Remove the E ring with pliers
10. Push the needle set forward slightly and remove the head from spray gun.

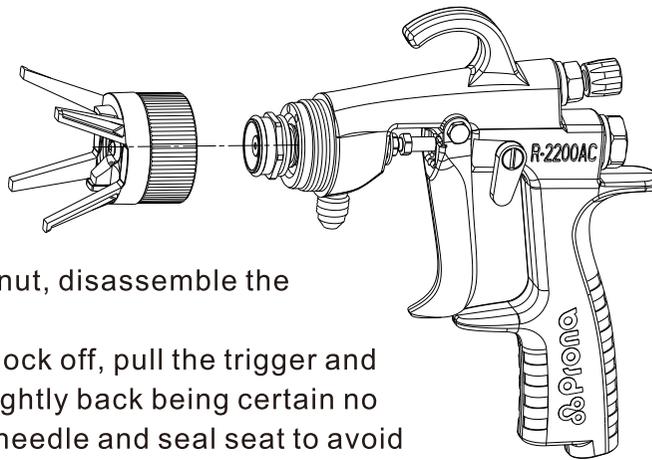


11. Release the pattern adjusting set with No. 13 wrench and unscrew it.
12. Release the fluid adjusting knob with No. 17 wrench and unscrew it.
13. Remove air valve spring and needle spring.
14. Pull out needle and air valve set gently.

DISASSEMBLY DIAGRAM



1. Loose elbow pipe coupler nut with No.21 wrench, disassemble fluid pipe coupler set.
2. Disassemble RFC-HR coupler with No.17 wrench.
3. Disassemble fixing screw with No.5 six angle screwdriver.
4. Loose elbow pipe nut with No.14 wrench, disassemble fluid elbow pipe set.



5. Unscrew air cap nut, disassemble the air cap set.
6. Pull the trigger block off, pull the trigger and pull the needle slightly back being certain no contact between needle and seal seat to avoid worn or damaged while disassemble nozzle coupler.
7. Remove nozzle coupler with No.21 wrench.

FUNCTIONS AND CHARACTERISTICS

R-2200AC Air-assisted gun is a combination of traditional air spraying and airless spraying technology. It atomization precisely to produce a stable coating spray surface. It can form a uniform coating surface on the work piece with high transfer efficiency and fine spraying quality.

R-2200AC recommended for spraying:

Varnishes, lacquers, colors, solvent and water-based paint , high solid materials paint . And it is also suitable for one component and two component paint.

SPRAY PARAMETER

Model	R-2200AC
Air Cap	R24
Maximum Working Air Pressure	6bar (87 psi)
Maximum Usage Fluid Pressure	20Mpa (200bar, 2900psi)
Fluid Output	Depending On Tip Size
Maximum Operating Temperature	50 °C
Air Consumption	385 L/min(±10)
Transfer Efficiency	87 (±2 %)
Wetted Parts	Stainless Steel
Fluid Connector	1/4 NPS , 360°Ln line Filter Or Swivel Fitting
Air Connector	1/4PF , 360°Swivel Fitting
Safety Device	Safety Lever ,Protection Cap
Material Filter	Fluid Connector the In line filter (100mesh)
Noise Level	80 dBa (±2)
Spray Distance	200mm
Weight	620g (1.37 lbs)
Testing Conditions: Paint Pressure=60 Viscosity=20 s Air Pressure=1.5 bar Temperature=20 °C Relative Humidity=60%	

SAFETY INSTRUCTIONS:

⚠ CAUTION : When use the equipment , if you do not fouow this manual stipulation it will cause danger . please read fully of this operation manual before operating your equipment .

Only trained operators can use this equipment.

The foreman must ensure the operator has understood the safety instructions of this equipment as well as the instructions in the manuals for the different parts and accessories.

Read carefully of this instruction manuals , labels before operating the equipment.

Incorrect use may result in injury .This equipment is for professional use only. It must be used for what it has been designed for .Never modify the equipment .The parts and accessories supplied must be regularly inspected. Defective or worn parts must be replaced.



1. Install a conductive fluid hose or a conductive air hose on the Air-assisted spray gun to ground the gun.



2. Never exceed the maximum operating pressures of the equipment components.



3. Never try to stop the spray fan with any part of the body (hands, fingers.....) or with rags. Never point the spray gun at anyone or at any part of the body.



4. Never wipe the end of the nozzle with the fingers.



5. The operator will need medical attention if the high pressure material spray is in contact with the the body (eyes, fingers.....).



6. Always lock the gun trigger with the safety device when not operating the gun.



7. Always use the equipment in a well ventilated area to protect health and to minimize the risks from fire and explosions.



8. To protect the operator, protective clothing (gloves, respirator mask, glasses, clothes.....) are required.



9. Always depressurize air and hoses before carrying out any servicing on the gun .

10. Use the equipment in a properly ventilated area.

3

XV. Fixing screw in the fixing hole, lock the elbow nut into the fluid connector of gun head. Adjust fluid elbow set' s position, lock fixing screw into gun body with No.5 six angle screwdriver, lock the elbow nut with No.14 wrench.

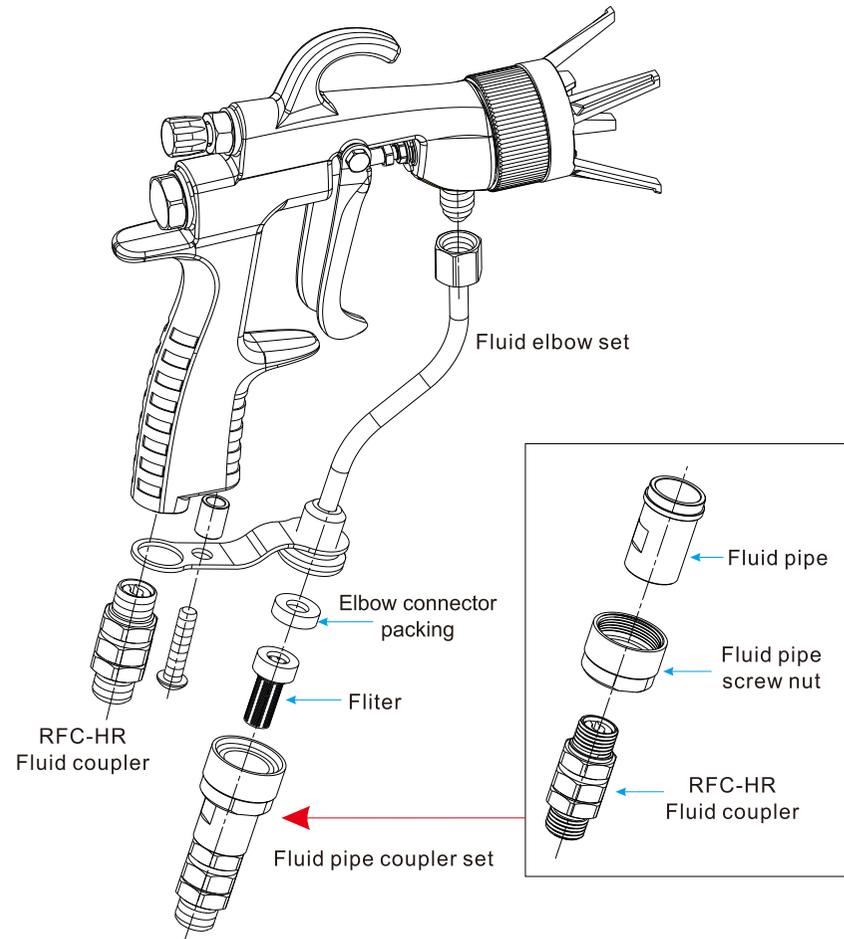
XVI . Apply glue to threads of RFC-HR coupler, screw it to the air inlet. Lock it with No.17 wrench.

XVII . Fluid pipe coupler set assembly

1. Assemble Fluid connect pipe coupler set .

2. Apply glue to threads of RFC-HR coupler, screw it to the fluid pipe, stick the paint pipe with No. 16 wrench, lock RFC-HR with No. 17 wrench.

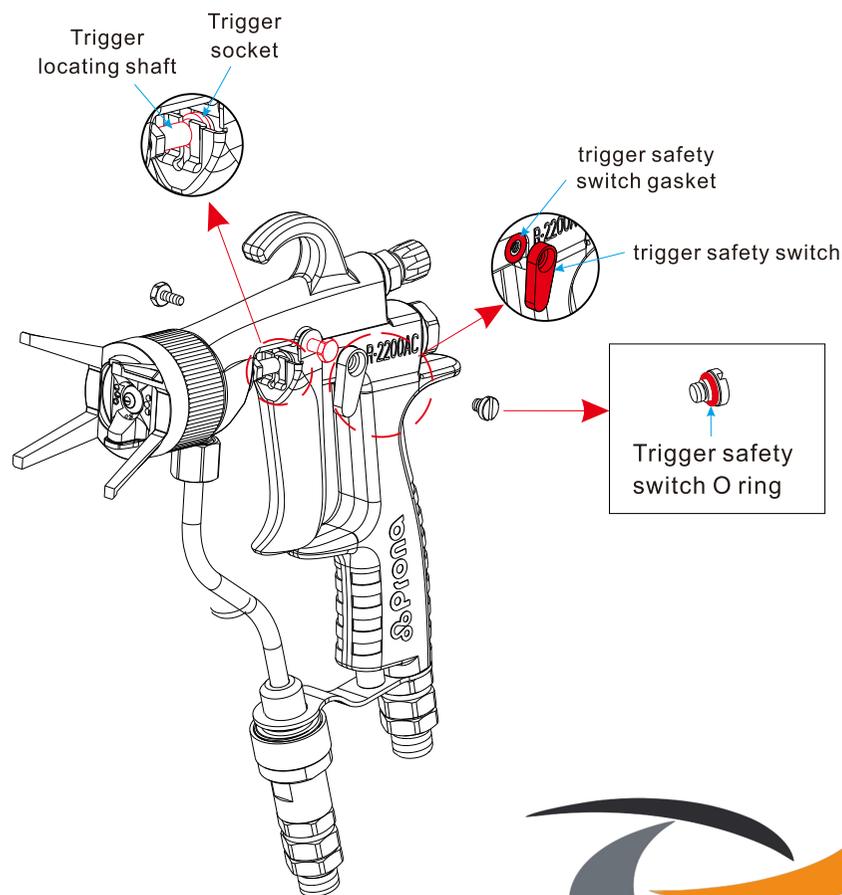
XVIII . Put fliter and elbow connector packing in the fluid pipe coupler, screw it to elbow connector ,lock screw nut with No.21 wrench.



XIII . Let trigger stuck in the middle of trigger coating shaft and trigger socket . The hole alignment air-Assisted spray gun trigger hole . Then plug the trigger seal in trigger hole . Lock it with screw

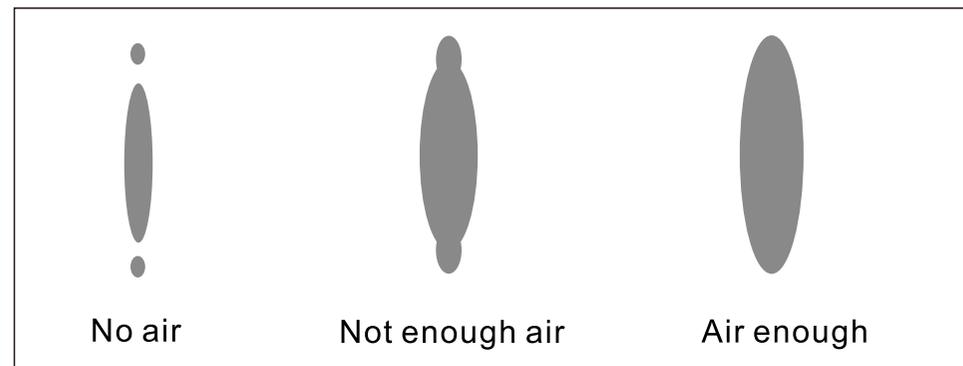
XIV. Trigger safety switch assembly

1. Set Trigger safety switch O ring to switch fixing screw
2. Put gasket to switch hole , and set safety switch on the gasket, put the fixing screw in the hole of trigger block, apply glue to screw threads, lock it with screwdriver.



INSTALLATION

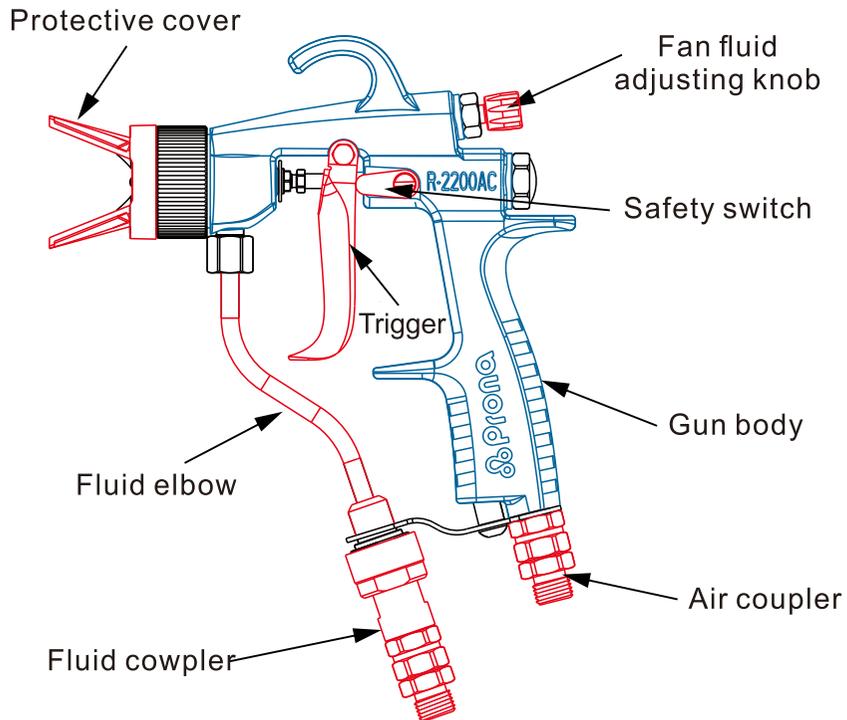
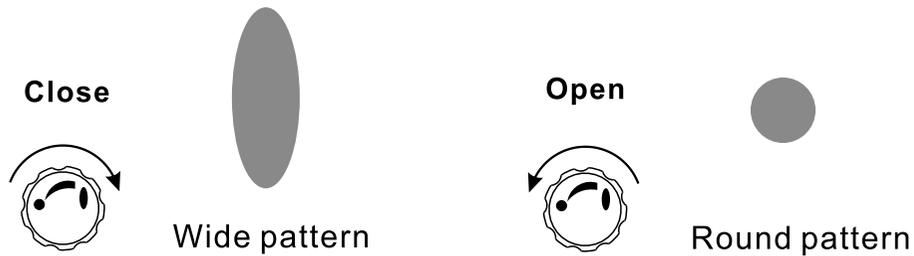
1. Prepare the paint (According to the coating parameter table mixing and filtering the paint, let the paint reach a suitable viscosity .).
2. The air supply to the equipment must be (clean dry air, maximum air pressure=6bar/87psi)
3. First of all , to pulled of full paint into the pump (refer to pump instruction manual).
4. Unlock the safety switch to release the gun trigger. Point the gun into a waste container and open the gun by using the trigger until clean material flow.
5. Lock the safety switch.
6. Select a spray nozzle (refer to AIR-ASSISTED SPRAY GUN. nozzle chart).
7. Let the rabbet of nozzle alignment air cap . locating pin , install the spray nozzle on air cap.
8. After set up the nozzle into air cap . let the air cap alignment the head of gun body screw thread screw the air cap on spray gun.
9. Unlock the safety switch, Through the trigger to start the spray gun.
10. Adjust the pump air pressure (red regulator) for the desired flow rate.
CAUTION: Maximum Usage Fluid Pressure 20Mpa (200bar, 2900psi)
- NB: Increase fluid pressure until the spray fan is correct. Stop adjustment when the spray fan is giving the best results.
11. Adjust the atomizing air regulator until the pattern stable.
NB: The below picture show out fan pattern and spraying air pressure relationship.



Do not increase spraying air pressure once the correct fan is obtained.

12. Use fan fluid, adjust knob to adjusting the pattern.

Air knob close → large fan
 Air knob open → round fan



NB : Changing the nozzle can change the paint output (refer to AIR-ASSISTED SPRAY GUN nozzle chart).

VIII. Assemble air valve set

1. Install valve packing 1&2 to the outside O-groove of valve.
2. Install C 092 -O packing to the inner O-groove of valve.

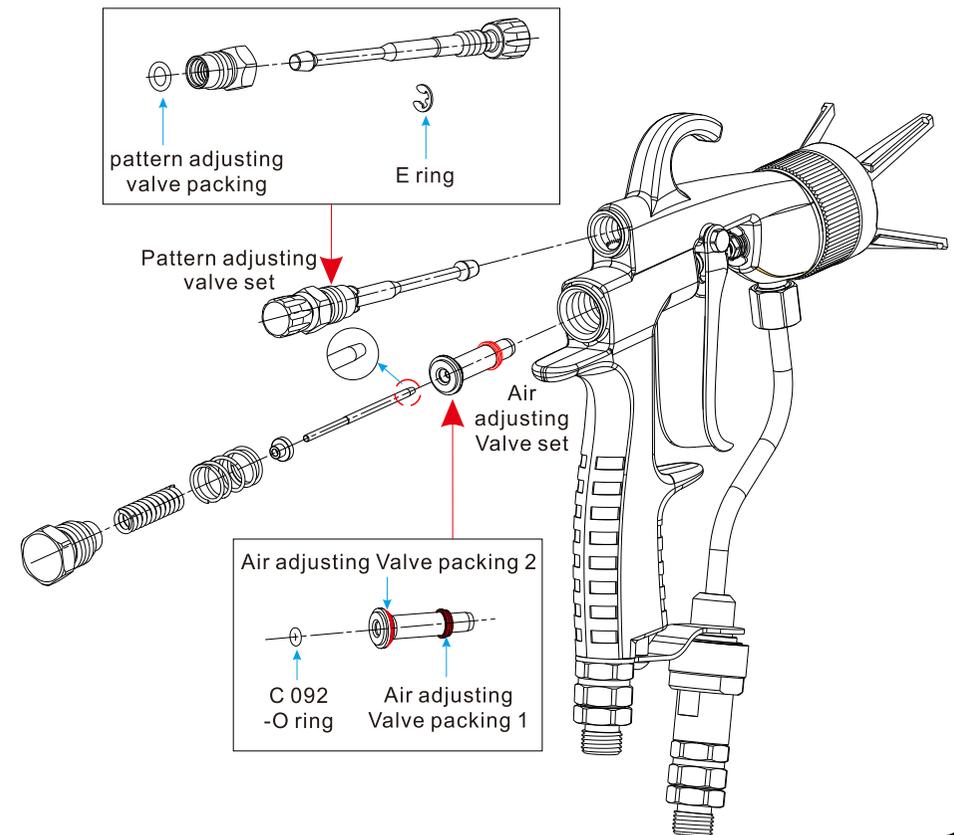
IX. Insert rod of needle to air valve set (angle part for the front), install needle seat to the back of air valve.

X. Set needle spring to the back of needle rod, set air valve spring to needle spring. Apply fixed glue to the paint knob threads, screw paint knob into air mix spray gun, lock the paint knob with No. 17 wrench.

XI. Pattern adjusting set assembly.

1. Fit the pattern adjusting packing set into the inner hole of the pattern guide, screw the mandrel into the guide, clip E ring into the slot of the mandrel.

XII. Apply glue to the thread of the pattern guide, screw pattern adjusting set to the pattern hole, lock it with No.13 wrench.

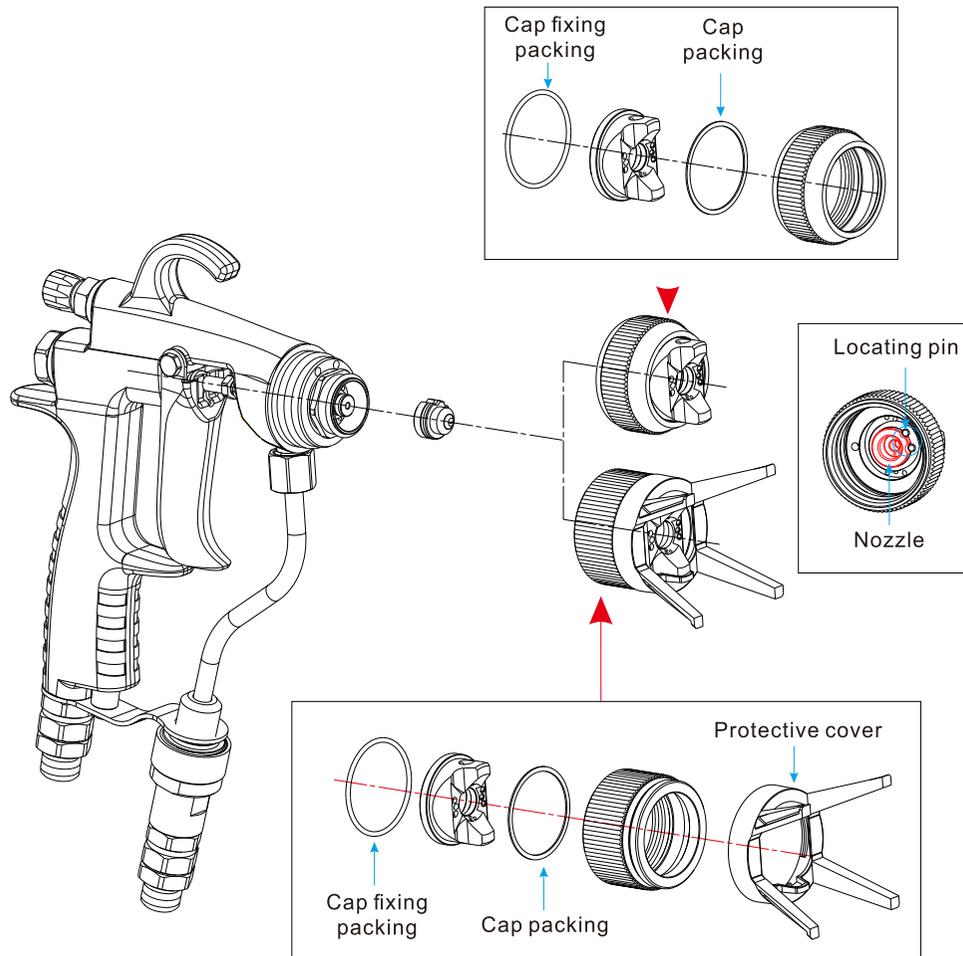


V. Air cap assembly

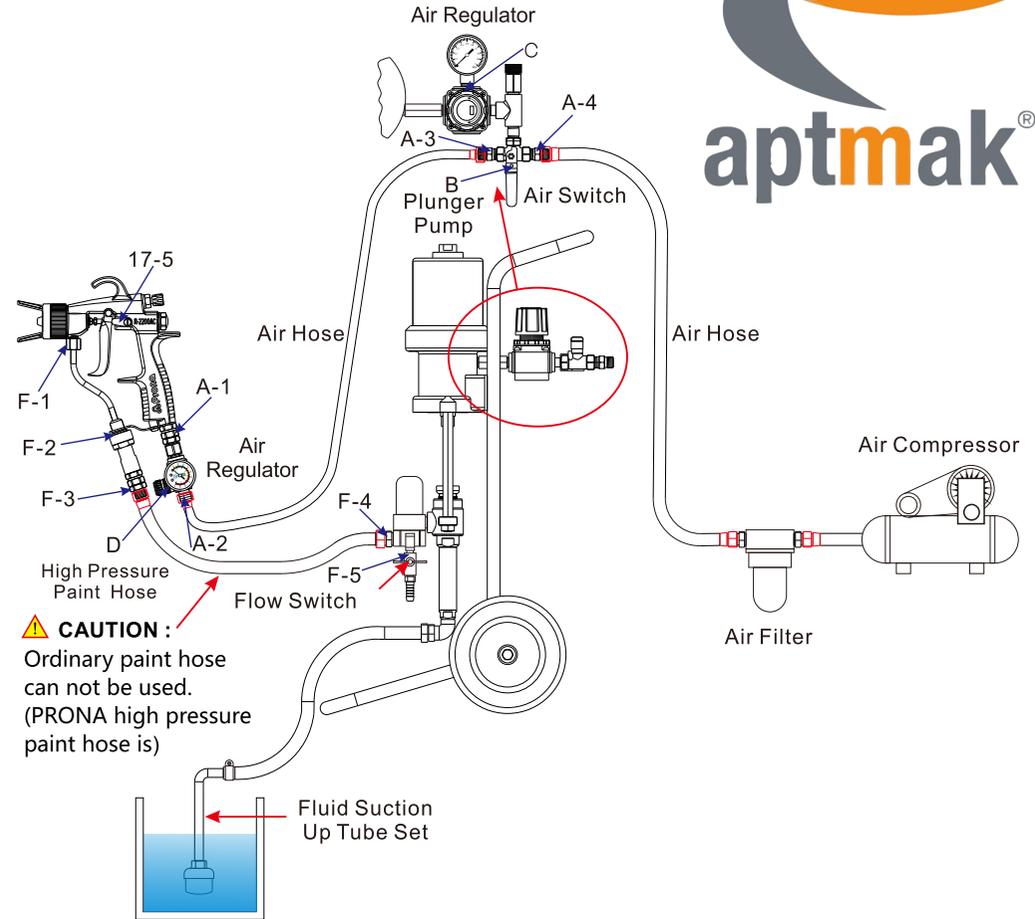
1. Air cap set without protective cover: Install cap packing set and air cap to the inner cap nut, install the cap fixing packing to the inner O-groove.
2. Air cap set with protective cover: Install cap packing set and air cap to the inner cap nut, install the cap fixing packing to the inner O-groove, set the protective cover to the front of cap nut.

VI. Install nozzle inside the air cap set, align the locating pin of air cap with the recesses of the nozzle, coincide then install air cap set to spray gun.

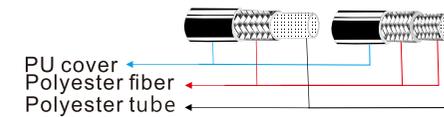
VII. Screw nozzle cap set to the head of gun, lock cap nut, adjust angle of air cap.



INSTALLATION DIAGRAM



High Pressure Paint Hose



Hose inner core of polyamide, resistant to most of the solvents used in the paint industry, cover made of polyurethane-ne for excellent fatigue and abrasion resistance. Manufactured to meet special requirement and speculations.

Hose type	Standard size	Inner tube size		Outer tube diameter		Maximum operating pressure		Maximum burst pressure		Millimetre	Bend semi diameter	Size
		in	mm	in	mm	in Bar	in PSI	in Bar	in PSI			
RX1.2	3	1/8"	3.2	2/7"	7.2	220	3200	880	12800	25	38	1/4NPS 3/8NPS
RX2.3	4	3/16"	4.7	2/5"	10.4	235	3400	940	13600	40	73	
RX2.4	6	1/4"	6.4	1/2"	12.3	250	3625	1000	14500	55	94	

OPERATION

Keep the gun perpendicular to the surface to be painted and where possible keep the spray fan parallel to the work piece to give an uniform coating thickness.

For air-assisted spray gun, make sure the trigger released after spray gun alignment to the head of work piece . Close trigger before the spray gun leave end of work piece . Make sure that the coating area uniform and regular .

SPRAY GUN USE SEQUENCE

1. Make sure the safety switch(17-5) of trigger is closed.
2. Make sure the paint back set (F-5) of the pump is closed.
3. Make sure all nozzle connector (2-2) are locked.
4. Make sure all air cap set (1-1) (1-2) are locked.
5. Make sure all paint couplers (F-1/F-2/F-3/F-4/F-5) are locked.
6. Make sure all air couplers (A-1/A-2/A-3/A-4) are locked.
7. Open the air source of the pump (B)→Adjust the air pressure(C) (slow regulation)→Check whether the paint tube and all fittings are in normal position without leakage→Open the air source of the spray gun→Adjust the air pressure of the spray gun→Start safety switch of the trigger(17-5) → Test atomizing effect→adjust the spray pattern to achieve satisfactory result→start up spraying

STOP SPRAY GUN SEQUENCE

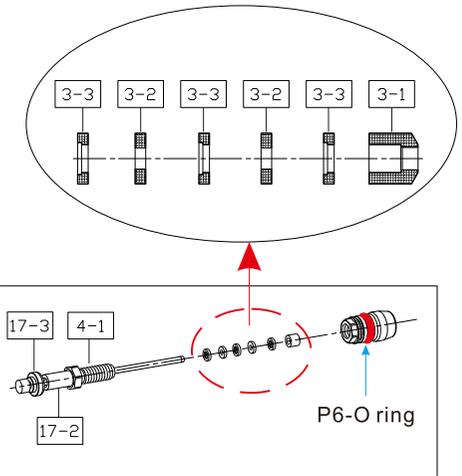
Close the air source of the pump (B)→Close the air control valve© →Release the air pressure in the pump→Switch off paint→Release the paint pressure in the gun→Turn on the flowback valve (F-5) and release the paint pressure of the pump→Turn off the air pressure regulating valve of the spray gun(D)→Close the trigger safety switch(17-5).

ASSEMBLY DIAGRAM

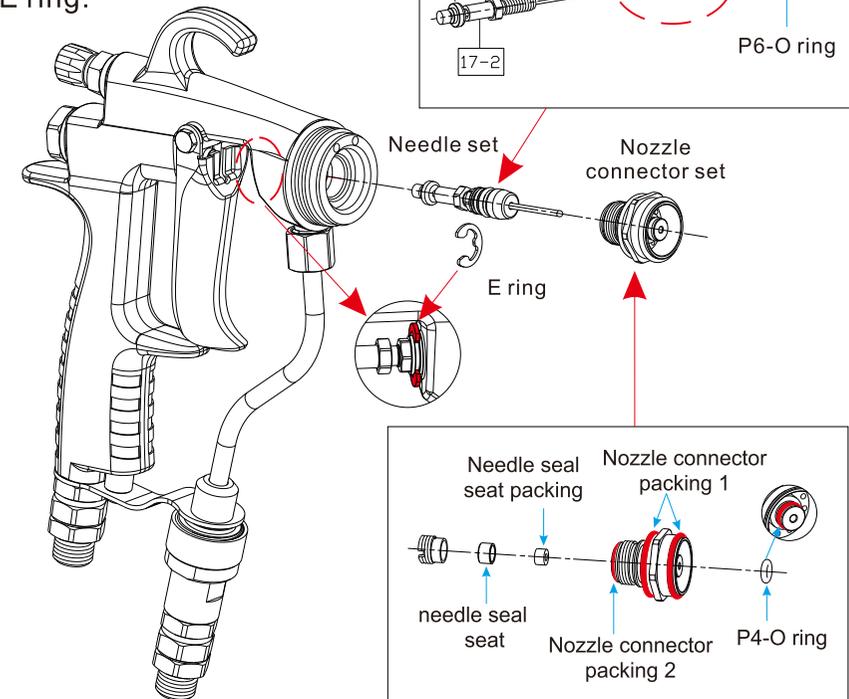
Parts 3-1, 3-2 and 3-3
Assembly order

I . Assembly the needle set

1. Install the P6-O ring to the needle packing screw.
2. Insert parts to the needle in sequence: (17-3)→(17-2)→(4-1)→(3-3)→(3-2)→(3-3)→(3-2)→(3-3)→(3-1), then lock them with No.7 wrench into the needle packing screw guide.



II . Assemble the needle set into the head of gun and fix it with a E ring.



III. Nozzle connector set

1. Install the P4-O ring to the nozzle connector. Install the nozzle connector packing 1 to the nozzle connector packing outside groove, and nozzle connector packing 2 to the thread groove.
2. Press the needle seal seat packing into the inner hole of the needle seal seat, insert the seat into the nut hole, screw it into the nozzle connector.

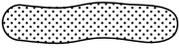
IV . Screw nozzle connector set into the gun head with No.21 wrench.

(Pull the needle slightly back being certain no contact between needle and seal seat to avoid worn or damaged while fix the nozzle.)

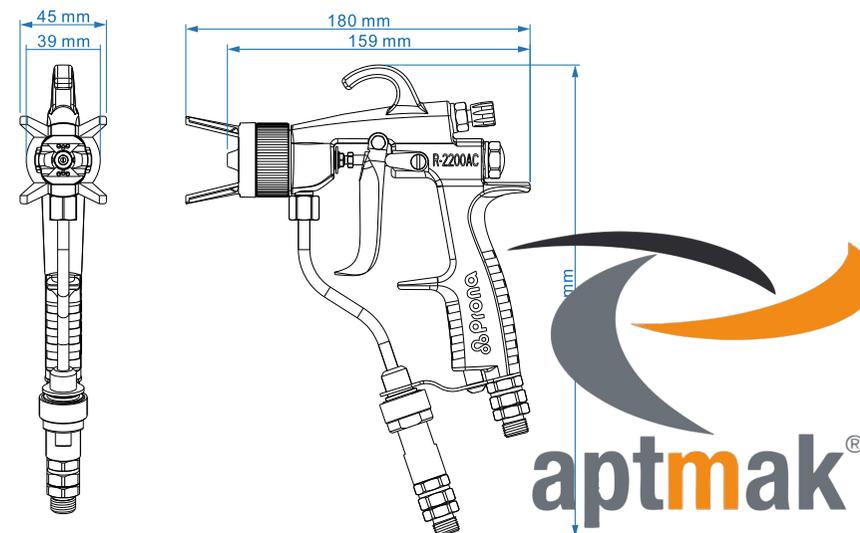
MAINTENANCE

1. Clean the spray gun after very time use. Don't dip the whole spray gun into the thinner or solvent.
2. Do not damage the air cap, nozzle, nozzle coupler and needle. Metal objects shall not be used for cleaning the holes of air cap, nozzle and nozzle coupler.
3. Air cap, nozzle, nozzle coupler and fliter. can be cleaned with a brush dipped in a thinner.
4. Spray cleaning the paint in passages with thinner.
5. Clean the parts before reassembling the spray gun.
6. Add lubricating oil to air valve and pattern adjusting set of spray gun. (See Page 18)

TROUBLESHOOTING AND MAINTENANCE

Problem	Cause	The solution
 <p>When spraying sometimes no paint out</p>	<ol style="list-style-type: none"> 1. Nozzle(2-1) loose or O-ring(11-1) broken. 2. Fluid needle packing(3-2) dry not lubrication or wear, or Fluid needle packing screw(4-1) loose cause the air come into fluid passage way. 3. Fluid connector pipe set(2-2) or Fluid connect pipe (24-2) loose . 	<ol style="list-style-type: none"> 1. Tightening air cap set(1-2) or change the O-ring(11-2). 2. To lubrication or change the packing (3-2), or tightening fluid packing(4-1) screw . 3. Tightening fluid connector pipe set (22) and fluid connect pipe set(24-2).
 <p>The pattern bent and deformed</p>	<ol style="list-style-type: none"> 1. The nozzle(2-1) blocking. 2. Air cap(1-1) atomization blocking or deformed. 	<ol style="list-style-type: none"> 1. Cleaning or change Fluid nozzle(2-1), at the same time also clean the filter (23) and fluid passageway. 2. Change or clean Air cap(1-1).
 <p>Middle of pattern too thin</p>	<ol style="list-style-type: none"> 1. Atomization air pressure too high 	<ol style="list-style-type: none"> 1. Reduce air pressure ,or adjust the pattern valve set (5) to get good pattern.
 <p>Middle of pattern too thick</p>	<ol style="list-style-type: none"> 1. Atomization air pressure too low. 2. The paint too thick. 3. Fluid pressure too high. 	<ol style="list-style-type: none"> 1. Turn up atomization air pressure. 2. Turn down fluid viscosity. 3. Turn down fluid paint pressure.
 <p>Nozzle leakage</p>	<ol style="list-style-type: none"> 1. Fluid needle(10) wear or have dirty things. 2. Fluid needle seal set(7-1) ear or have dirty things. 3. Fluid needle spring(9) power not enough. 	<ol style="list-style-type: none"> 1. Change or clean fluid needle set(10). 2. Change or clean fluid needle seal set(7-1). 3. Change fluid needle spring(9).
<p>The spray gun head leakage</p>	<ol style="list-style-type: none"> 1. Air valve packing(19) wear or have dirty thing. 2. Air valve spring(18) power not enough. 	<ol style="list-style-type: none"> 1. Change or clean air valve set(19). 2. Change air valve spring(18).

SPRAY GUN SIZE DIAGRAM



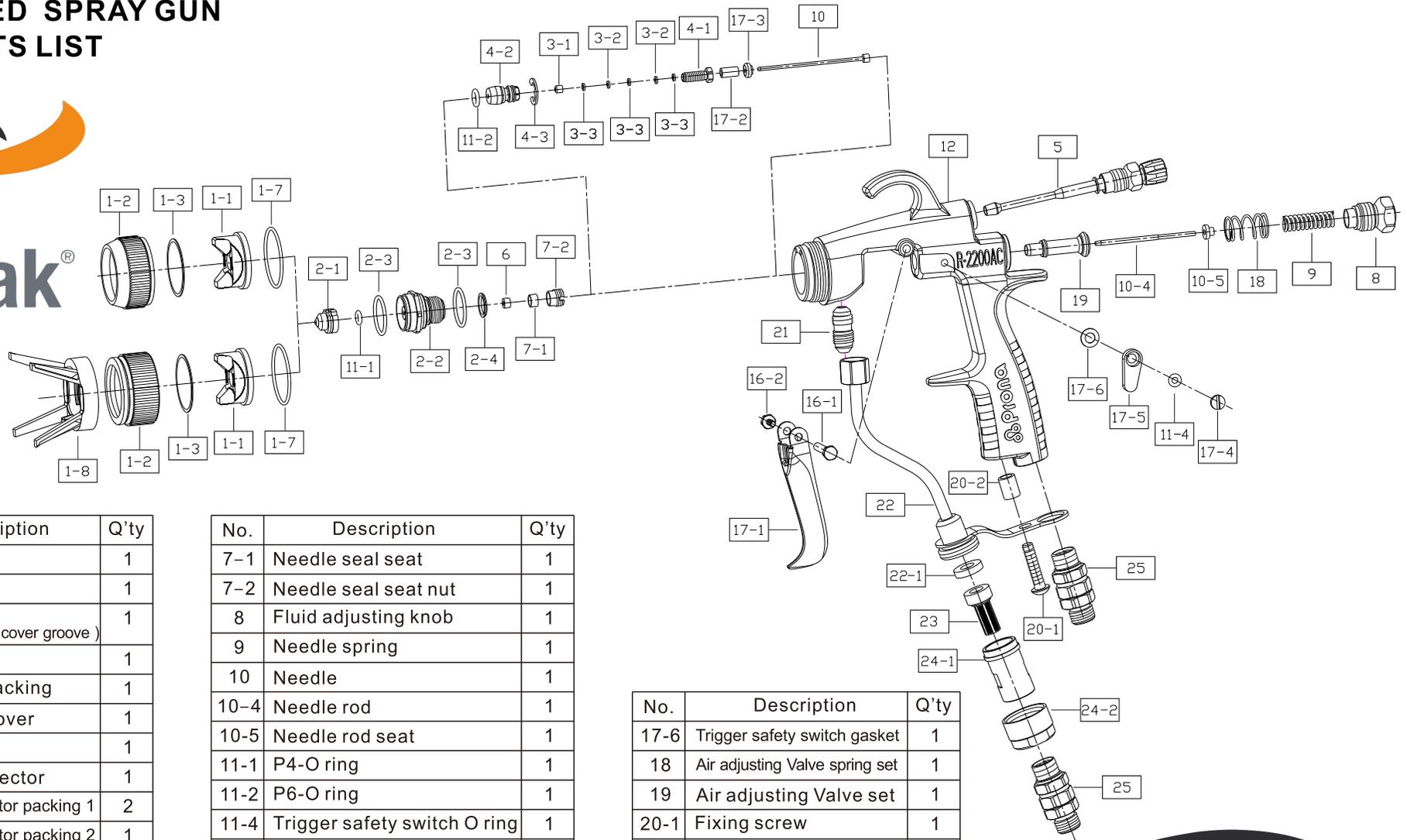
NOZZLE MODEL AND SPECIFICATION COMPARISON TABLE

Fluid Nozzle Orifice	Fluid Output		Spray Length: Spray Distance: 250mm(10in)										Angle Spray Length mm(in)		
	7MPa, 70bar, 1000psi	12MPa, 120bar, 1716psi	10°	20°	30°	40°	50°	60°	70°	80°	90°				
	mm(in)	L/min	mm(in)	mm(in)	mm(in)	mm(in)	mm(in)	mm(in)	mm(in)	mm(in)	mm(in)				
0.15(0.006)	0.12	0.15	106 (02.034)	206 (02.054)	406 (02.114)										
0.18(0.007)	0.15	0.20	107 (03.034)	207 (03.054)	307 (03.094)		507 (03.134)								
0.20(0.008)	0.18	0.25	108	208	308	408									
0.23(0.009)	0.25	0.30	109 (04.034)	209 (04.054)	309 (04.094)	409 (04.114)	509 (04.134)	609							
0.25(0.010)	0.30	0.35		210	310	410	510	610	710						
0.28(0.011)	0.35	0.45	111 (06.034)	211 (06.054)	311 (06.094)	411 (06.114)	511 (06.134)	611 (06.154)	711						
0.30(0.012)	0.40	0.50		212	312	412	512	612 (07.154)	712						
0.33(0.013)	0.48	0.60	113 (09.034)	213 (09.054)	313 (09.094)	413 (09.114)	513 (09.134)	613 (09.154)	713 (09.174)	813					Nozzle Model
0.38(0.015)	0.65	0.80	115	215	315 (12.094)	415 (12.114)	515 (12.134)	615 (12.154)	715 (12.174)	815					
0.40(0.016)	0.75	0.95		216 (14.054)	316 (14.094)	416 (14.114)	516 (14.134)	616 (14.154)	716 (14.174)	816					
0.43(0.017)	0.85	1.05		217	317	417	517	617	717	817	917				
0.48(0.019)	1.10	1.25		219	319	419	519 (18.134)	619 (18.154)	719 (18.174)	819 (18.194)	919				
0.50(0.020)	1.20	1.40			320 (20.094)	420 (20.114)	520 (20.134)	620 (20.154)	720 (20.174)	820 (20.194)	920				
0.53(0.021)	1.35	1.60			321	421	521	621	721	821	921				
0.58(0.023)	1.55	1.80				423	523	623	723	823	923				

A: Conventional recommended nozzle

**The amount of paint output is to use water for testing, water output data is only as reference to choose nozzle orifice, for the specific paint output, the actual spraying shall prevail.

AIR-ASSISTED SPRAY GUN PARTS LIST



No.	Description	Q'ty
1-1	Air cap	1
1-2	Cap nut	1
	Cap nut (have Protective cover groove)	1
1-3	Cap packing	1
1-7	Cap fixing packing	1
1-8	Protective cover	1
2-1	Nozzle	1
2-2	Nozzle connector	1
2-3	Nozzle connector packing 1	2
2-4	Nozzle connector packing 2	1
3-1	Needle packing 1	1
3-2	Needle packing 2	2
3-3	Needle packing gasket	3
4-1	Needle packing screw	1
4-2	Needle packing screw guide	1
4-3	E ring	1
5	Pattern adjusting valve set	1
6	Needle seal seat packing	1

No.	Description	Q'ty
7-1	Needle seal seat	1
7-2	Needle seal seat nut	1
8	Fluid adjusting knob	1
9	Needle spring	1
10	Needle	1
10-4	Needle rod	1
10-5	Needle rod seat	1
11-1	P4-O ring	1
11-2	P6-O ring	1
11-4	Trigger safety switch O ring	1
12	Gun body	1
16-1	Stud	1
16-2	Stud screw	1
17-1	Trigger	1
17-2	Trigger locating shaft	1
17-3	Trigger socket	1
17-4	Trigger safety switch fixed screw	1
17-5	Trigger safety switch	1

No.	Description	Q'ty
17-6	Trigger safety switch gasket	1
18	Air adjusting Valve spring set	1
19	Air adjusting Valve set	1
20-1	Fixing screw	1
20-2	Fixing screw seat	1
21	Fluid connector	1
22	Fluid elbow set	1
22-1	Elbow connector packing	1
23	Filter	1
24-1	Fluid pipe	1
24-2	Fluid pipe screw nut	1
25	RFC-HR Fluid coupler	2

