

**STW**  
**waste oil burner**  
**service manual**



## DESCRIPTION

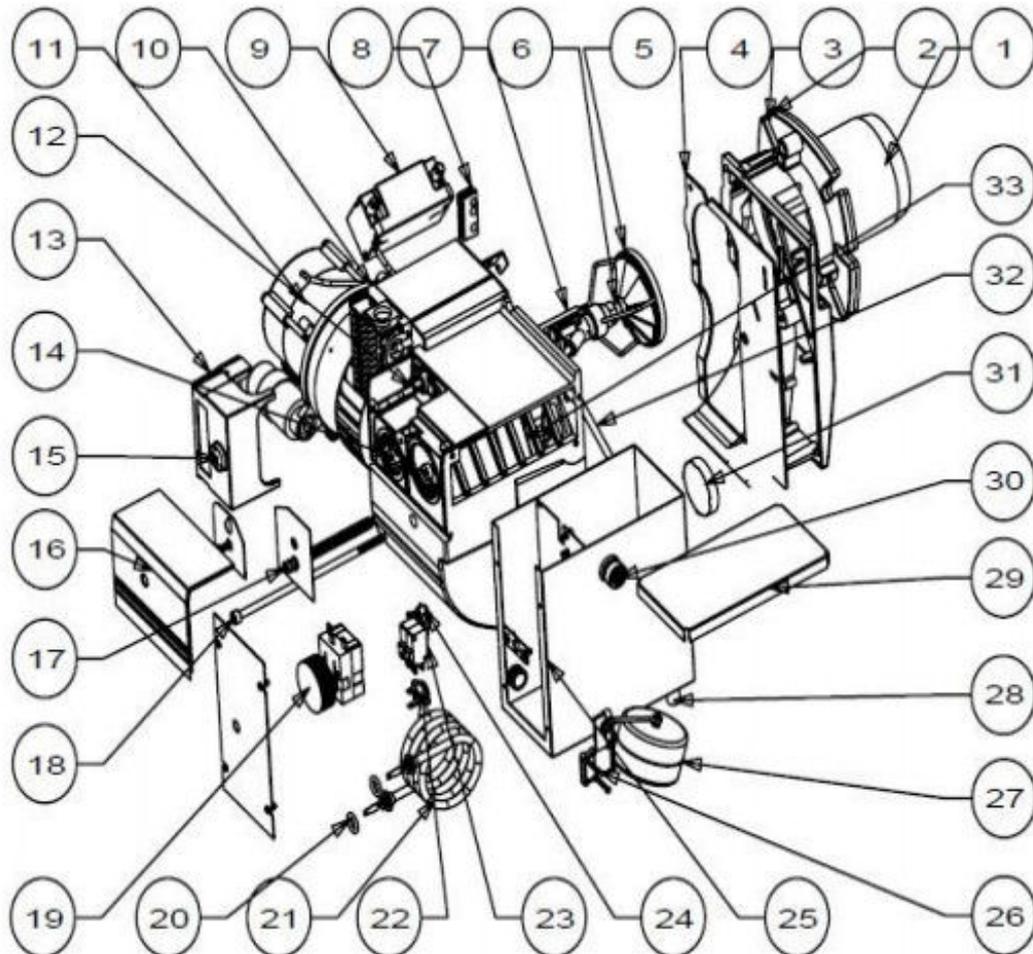


Fig. 1

- |                     |                           |
|---------------------|---------------------------|
| 1. Blast tube       | 17. Air regulator         |
| 2. Asbestos gasket  | 18. Body screw            |
| 3. Flange           | 19. Oil temperature       |
| 4. Body gasket      | 20. Seal gasket           |
| 5. Brake plate      | 21. Heating tube          |
| 6. Oil nozzle       | 22. Limits of controller  |
| 7. Heater           | 23. Level switch          |
| 8. Rubber block     | 24. Level height adjustor |
| 9. Transformer      | 25. Oil tank              |
| 10. Controller base | 26. Level switch base     |
| 11. Motor           | 27. Float ball            |
| 12. Photocell       | 28. Overflow connector    |
| 13. Controller      | 29. Oil tank cover        |
| 14. Compressor air  | 30. Oil inlet connector   |
| 15. Reset button    | 31. Filter                |
| 16. Cover           | 32. Oil pipe              |
|                     | 33. Air inlet             |



## BURNER ACCESSORIES

No.	Description	QTY
1	Transfer oil pump	1PC
2	Air controller	1PC
3	Install flange	1PC
4	Asbestos gasket	1PC
5	Outlet-inlet pipe	2PC

No.	Description	QTY
6	Install screw	4
7	Inner six angle spanner	1
8	Nozzle Spanner	1
9	Oil filter	1
10	Oil line connector	4

## TECHNICAL DATA

Item no.	Cap. (KW)	Motor	Nozzle Qty	Combustion (KG)	Transfer Motor	Power Supply
STW120-P	10-50	130W	1	1-4	120W	230V/50Hz
STW120	12-50	90W	1	1-4	120W	230V/50Hz
STW133-1	40-80	130W	1	3-7	180W	230V/50Hz
STW133-1P	40-80	180W	1	3-7	180W	230V/50Hz
STW133-2P	70-115	220W	2	6-10	180W	230V/50Hz
STW133-2	70-115	130W	2	6-10	180W	230V/50Hz
STW146-2	70-139	150W	2	6-12	180W	230V/50Hz
STW146-2P	70-139	250W	2	6-12	180W	230V/50Hz
STW146-3	115-200	180W	3	10-18	180W	230V/50Hz



## OVERALL DIMENSIONS

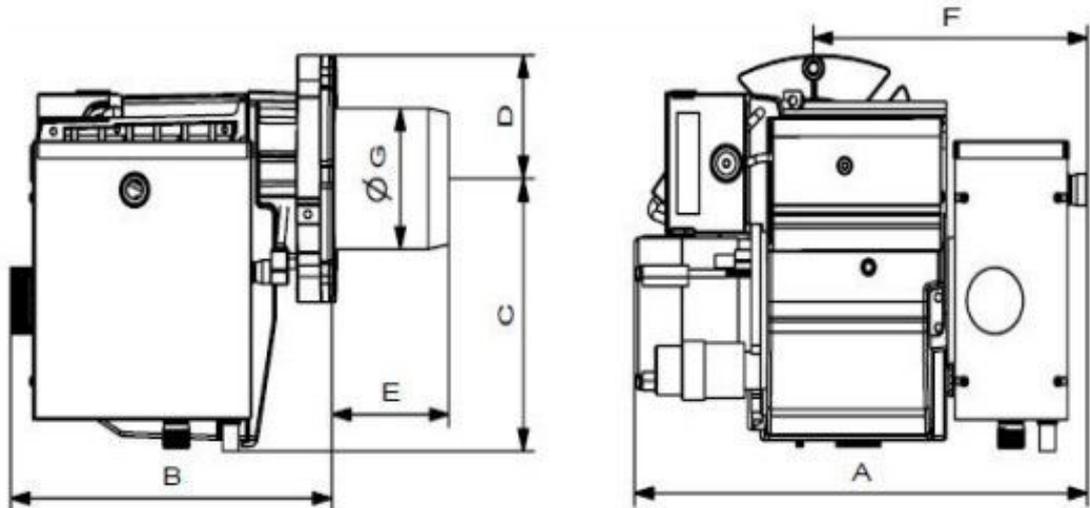
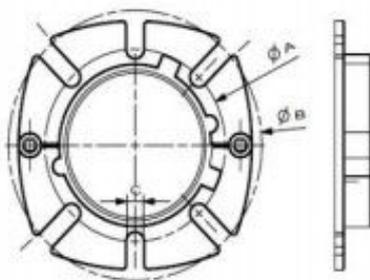


Fig. 2

	A	B	C	D	E	F	G
STW120	338	242	172	78	85	204	89
STW133	370	268	196	95	105	196	95
STW146	380	268	196	95	115	196	114

## FLANGE DIMENSIONS



	A	B	C
STW120	120	160	11
STW133	145	170	11
STW146	145	170	11



## AIR PUMP STRUCTURE DIAGRAM

**WARNING:** this air pump is no oil pump, is strictly prohibited to add lubricating oil.

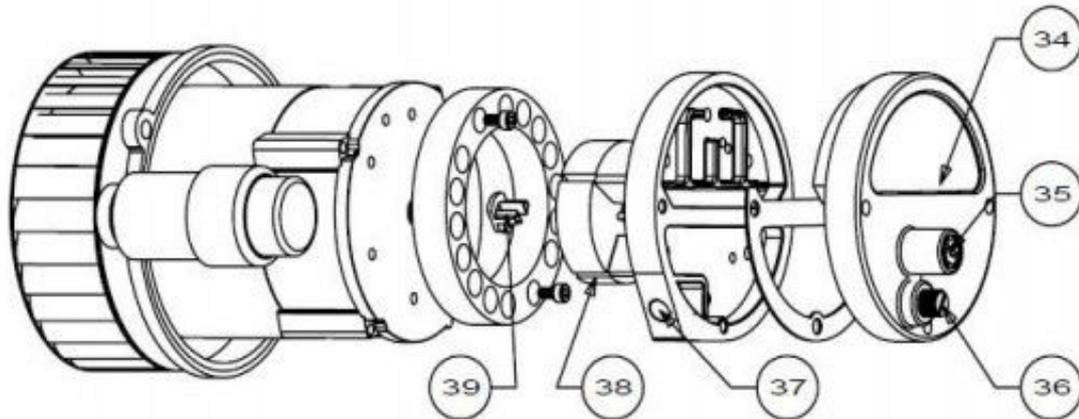


Fig.4 STW120 AIR PUMP

34. Air inlet    35. Pressure regulator    36. Pressure port    37. Air outlet  
39. Coupling

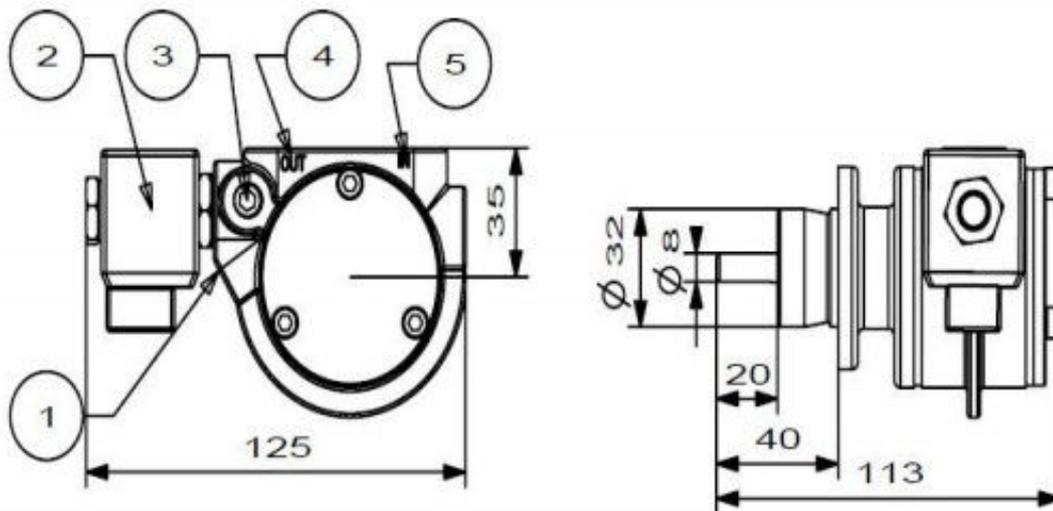


Fig.5 STW133 AIR PUMP

1. Pressure regulator    2. Solenoid    3. Pressure port  
4. Air outlet    5. Air inlet



## IGNITION ADJUSTION

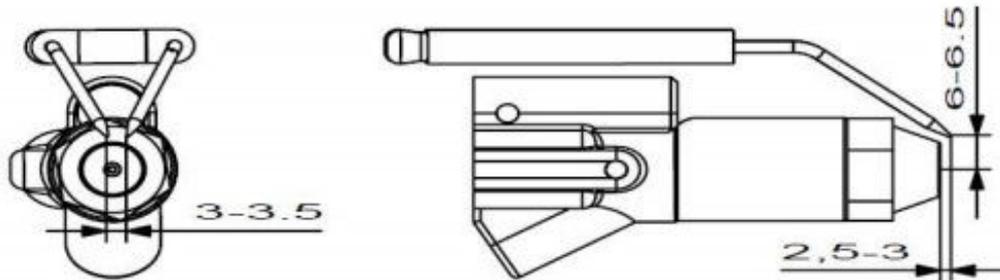


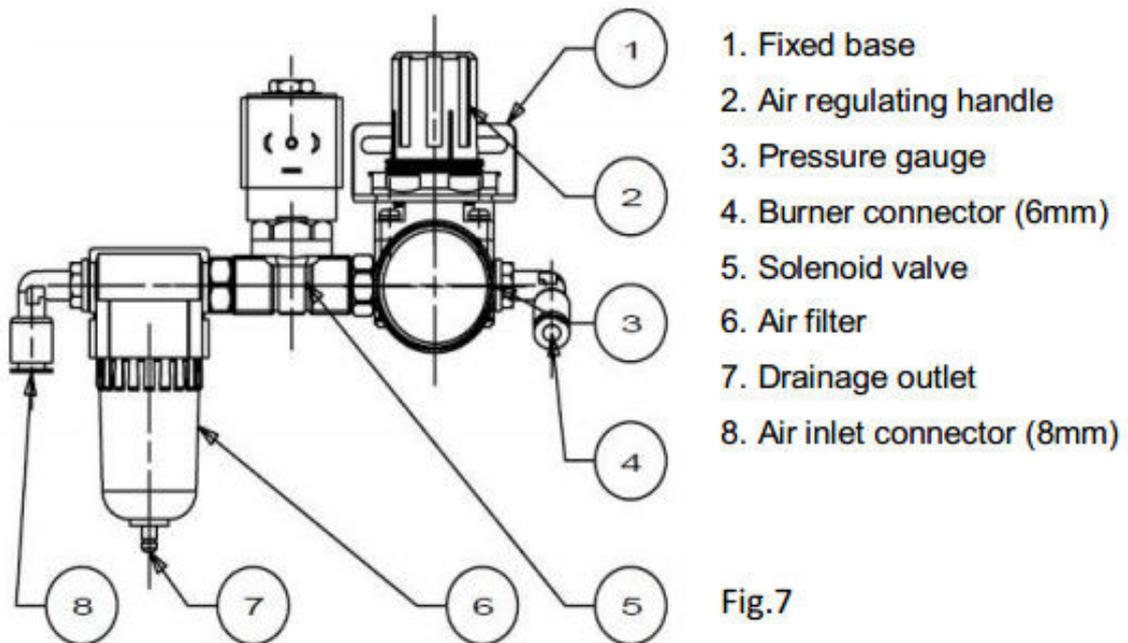
Fig.6

## NOZZLE DATA (COMBUSTION ADJUSTMENT)

Nozzle Number	Nozzle GPH	3 psig Air		4 psig Air		5 psig Air		Lift Height (Inches)
		Fuel (GPH)	Air (CFM)	Fuel (GPH)	Air (CFM)	Fuel (GPH)	Air (CFM)	
SN609-2	.20	.19	.36	.23	.45	.25	.49	1
		.16	.36	.20	.45	.22	.49	4
		.14	.36	.17	.45	.20	.49	7
SN609-3	.30	.29	.41	.33	.49	.36	.55	1
		.26	.41	.30	.49	.33	.55	4
		.23	.41	.27	.49	.30	.55	7
SN609-4	.40	.38	.45	.44	.54	.49	.61	1
		.34	.45	.40	.54	.45	.61	4
		.30	.45	.36	.54	.41	.61	7
SN609-5	.50	.48	.50	.54	.59	.58	.65	1
		.43	.50	.50	.59	.53	.65	4
		.38	.50	.46	.59	.48	.65	7
SN609-7	.65	.63	.59	.72	.67	.78	.76	1
		.57	.59	.65	.67	.72	.76	4
		.51	.59	.58	.67	.66	.76	7
SN609-8	.75	.75	.63	.83	.74	.93	.87	1
		.65	.63	.75	.74	.84	.87	4
		.59	.63	.67	.74	.75	.87	7
SN609-9	.85	.84	.71	.93	.80	1.04	.93	1
		.75	.71	.85	.80	.95	.93	4
		.66	.71	.77	.80	.86	.93	7
SN609-11	1.00	.96	.73	1.10	.91	1.15	1.02	1
		.84	.73	1.00	.91	1.06	1.02	4
		.72	.73	.90	.91	.97	1.02	7



## AIR CONTROLLER (WITHOUT AIR PUMP)



## TRANSFER OIL PUMP

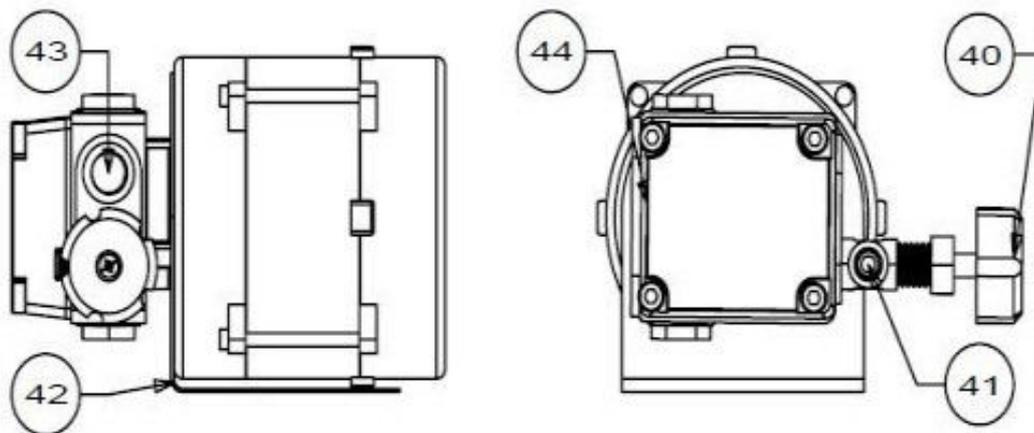


Fig.8

40. Oil flow rate adjusting handle      41. Oil outlet (to oil tank)  
42. Fixed base      43. Oil inlet connector      44. Oil pump



## BURNER INSTALLATION

**Warning:** the storage oil tank cannot be higher than the burner.

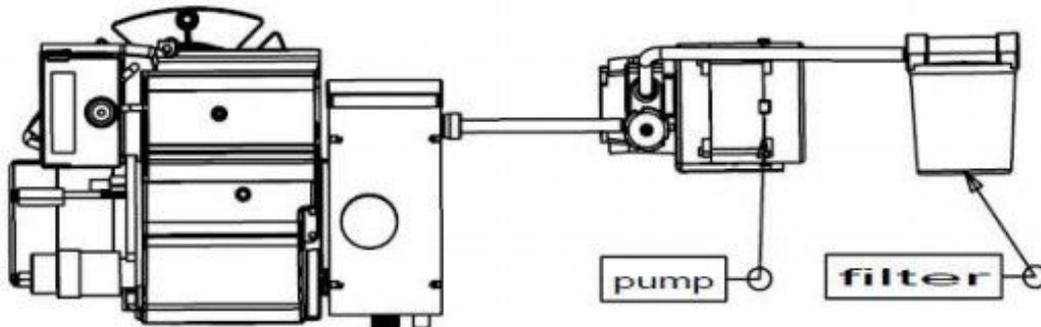
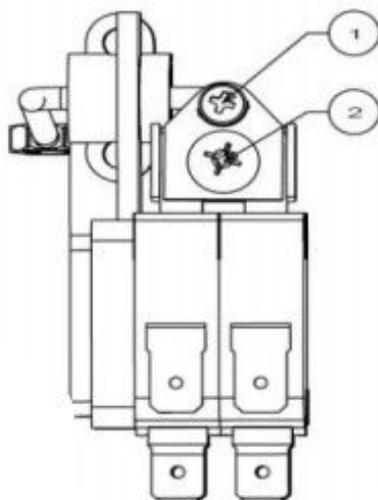


Fig. 9

1. Accessories oil pipe connect with Fig. 1-30 and Fig. 8-41.
2. Accessories oil pipe connect with Fig. 8-43 and connect accessories oil filter to Storage oil tank.
3. Fig. 1-14 connect with Fig. 7-4.
4. Fig. 7-8 connect with air source.

## THE HEIGHT OF LIQUID LEVEL ADJUSTMENT



1. Adjust screw Fig. 10-1 to adjust the level upper limit
2. Release Fig. 10-2, Move up Or move down can adjust the upper or lower limit of the height for floating ball.

Fig. 10



## OIL FLOW CONTROL

In order to reduce the frequent start of the transfer oil pump and instant cooling the oil temperature in heating oil tank, adjust handle no. 40 in Fig. 8. And control inlet oil rate to get the suitable oil flow rate. (With just over burning oil is better)

## TEMPERATURE- SETTING

Rotate the temperature control switch in Fig.1 to set the preheat temperature. In general, engine oil is 80-90 degree, vegetable oil is 110-120 degree.

## AIR PRESSURE- SETTING

Air pressure factory setting is in 0.35bar-0.4bar, too high air pressure will cause ignition difficult or cause oil atomization not good.

**WARNING: the overflow pipe in preheating tank Fig.1-28 must connect back oil to Storage oil tank**

## WORK PRINCIPLE

Turn on power supply, and then preheat oil, about 5-10 minutes (different kinds oil at different preheat oil times), after arrived at the set temperature, turn on the control box. Turn on Fig.1-15 to start burner.

1. Test photocell (dark).
2. Pre-purging and ignition (Normal working time is 13s).
3. Open air valve, injection oil.



4. Test photocell (bright).
5. After the normal combustion, oil level in heating tank will rise or drop by floating ball to control transfer oil pump.

## **FAULT LOCATION**

1. Turn on power supply, transfer oil pump cannot work.
  - a. Check motor and oil pump, whether the oil viscosity is too high to cause the transfer oil pump cannot start.
  - b. Check the oil pump whether blocked by oil impurities.
  - c. Check whether because blocked to make the oil pump connector slide.
2. After started the burner, stop work because have not make pre-purge time just ignition directly, fault lamp turn on.  
Check the air solenoid valve cannot close whether because blocked by sundries.
3. After started the burner, stop work after pre-purged and fault lamp turn on.  
Check the photocell, the control box have not detected photocell was dark.
4. After ignition burning, flame out suddenly, and fault lamp turn on.
  - a. Photocell damaged.
  - b. Oil atomization is not good.
  - c. Air flow is too large.
  - d. Preheating temperature is not upped
5. Transfer oil pump hard to stop.  
Check the float ball switch whether have fault.