

TYREINFLATOR
(Built in Compressor)
NEW GEN BIC TYPE INFLATOR

MODEL: AIR XPRESS
TPLNO: S15024



Operation, Maintenance & Parts Manual

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1. INTRODUCTION

1. Principle of Operation:

This product, Tyre inflator is an electronic pre-set type with microprocessor driven controller unit.

A piezoelectric transducer, called here as pressure sensor, is employed to convert the input energy from the form of compressed air to electrical signal output. The electrical signal thus derived are

modulated, manipulated and processed in the controller unit with the help of microprocessors. This unit provides the operator the means of operating the unit with displays and compressed air routing to desired ports.

The unit, apart from the controller and sensor has a 12V relay module to regulate supply to operating elements, Solenoid valve to direct air to different ports as activated by the controller logic, a buzzer to indicate to the operator when the set pressure is reached in the tyre under inflation and a silencer at the exhaust port of air.

2. Application:

This product is used for inflating and deflating tyres of all sizes designed for filling compressed air up to 170psi with a preset pressure easily set at the

controller display panel. A detailed list of vehicles and respective required pressure are available in the later part of this manual.

3. Operation:

When the required pressure is set in the controller and the foot valve is pressed over the tyre valve in a vehicle or otherwise, the air under pressure flows from the tyre and reaches the control through the pressure sensor. The pressure inside the tyre is converted by the pressure sensor to electrical signal which is then registered in the controller.

The microprocessor is then inducted into operation. First a comparison of pressure difference between set and existing tyre pressure takes place. Then, accordingly the solenoids are operated by the controller logic, where predefined ports are opened or closed for either inflating or deflating the tyres.

Once, the set pressure is reached, an audible buzzer signal is set for each the operator awareness to indicate that the cycle of operation is completed successfully.

When the tyre is deflated, the air is directed to the exhaust port where the air is exhausted through a silencer.

4. General

At this juncture, we wish to thank you for purchasing this quality product. This modern pneumatic machine has been designed to provide you with many hours of useful service.

This Operation and Maintenance Manual provides you with easy-to-understand operating instructions. Read the entire manual and follow all the instructions to keep your new pneumatic machine in top operating condition.

This manual comprises of a part list in addition to a recommended spare list, providing you information that you need to order parts.

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5. Training needs

Regarding training either on this product or any other product of ELGI, please refer to section titled "Training Centre Information" given later in this manual.

6. Product References, Illustrations and Specifications

All information, illustrations and specifications in this manual are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.

06. Service Information

Service on this pneumatic machine within and after the

Note

- e Proof of purchase will be required for warranty service.
- e Make sure this manual is read and carefully understood before starting/operating this machine.

Warranty period can be performed by any ATSELGI Branches and authorized distributors/dealers.

To obtain the listing of ATSELGI branches and authorized distributors/dealers in your area.

1. Retain the manual carefully throughout the life of the equipment, in order to procure correct spares.
2. While ordering spare parts, the following particulars must be

clearly mentioned to ensure supply of the right spare parts.

1. Model
2. Fabrication No.
3. Year of manufacture
4. Part name

5. Part number

6. Required quantity

3. Due to improvements being made constantly and continuously, the illustrations and descriptions on this manual are not binding

2. TECHNICAL DATA

No.	Description	Unit	Data
1	Model	---	AIR XPRESS
2	Operating Pressure	psi	0-170
3	Pressure Setting Range	psi	7-170
4	Over Load Pressure	psi	150
5	Input Power Supply	VAC	230 ^{+10%-15%}
6	Total Power Consumption	KW	1.5
5	Controller Details	---	---
a	Display	---	---
	1. Type	---	LCD
	2. No. of Digits	Nos	1
	3. Features	---	Unit & pressure display, function select display, error signal and rolling bar.
	4. Resolution	psi	1
b	Measuring Resolution	psi	±1
c	Number of Operating Keys	Nos	6
d	Operating Temperature	DegC	0 to 55
e	Operating Voltage	VAC	230 ^{+10%-15%}
f	Power	W	10
g	Electrical Protection	---	3A, fuse
h	Cycle End Indication – Inflation/Deflation	---	Continuous Beep Signal

No.	Description	Unit	Data
i	Accuracy	%	±0.5%offfullscale
6	LengthofOutletAirHose	M	10
7	LengthofPowercard	M	1.5
8	CompressorDetails	---	---
a	Model	---	VayuRAC2Hp
b	OperatingPressure	Kgf/cm ²	10
c	Displacement	lpm	249
d	Motor	---	---
	1.Type	---	SinglePhasePermanent SplitCapacitor(PSC)
	2.Rating	hp	2
	3.Voltage	VAC	230 ^{+10%-15%}
e	ElectricalProtection	---	20A, 2P MCB
f	Mounting	---	TankMounted
g	TankCapacity	Litre	27
9	OverallDimensionLXWXH	mm	335 X 503 X 1037 ± 10mm
10	Weight	---	95kg Approx
11	GADrawingNo.	---	150330120

3. SCOPE OF SUPPLY

1. Built in Compressor comprising of Cabinet containing main elements viz. compressor with tank, SMPS Board, Controller PCB, MCB, solenoid valves, pressure sensor, Buzzer etc.
2. Standard Accessories
Spiral hose Assembly 10M with clip on connector, 3 core cable of 1.5m long

4. INSTALLATION

- Don't unpack the equipment unless the site is ready for installation.
- The unit needs electrical connection with 230 volt (+10%-15%) AC Single phase for functioning. The power cord with of suitable specification is supplied with this unit.
- Check/Fill the oil in the compressor crank case as recommended.
- Take out the (PU tube) auto drain valve outlet to the outside of the cabinet.
- Connect the electrical cable with the main power supply.
- Ensure proper earthing is given.

Note

Do not overload compressor for a long period even though it is of continuous rating, as we recommend intermittent use only.

RECOMMENDED OIL	QTY
ELGI AIR LUBE	200ML

5. DESCRIPTION OF CONTROLLER UNIT

5.1 Description of LED:

OPERATING INSTRUCTION

Powering on the unit, the display will switch on as below:



1. Unit select

Device has four units that can be chosen by the user. kpa – psi – bar - kgf

Unit set here will become default unit for following usage, do not need to set unit each time.

Press **[i]** , **[SET]** will be shown on the LCD screen, and the unit will be flashing.

Press **[+]** or **[-]** to choose the unit.

Press **[confirm]** to confirm.

2. Set OPS

Press **[i]** twice, **[SET]** and **[OPS]** will be shown on the LCD screen, **[OPS]** will be flashing.

Press **[+]** or **[-]** to choose the OPS value.

Press **[confirm]** to confirm. If OPS value is not zero, **[OPS]** will be displayed at the LCD screen.

3. Set the default pre-set pressure value

The default pressure value of **[motor]** is 15 psi/1 bar, **[eye]** is 21 psi/2.1 bar, The user can reset the value according to their requirement, they can save the value for permanent use.

Press **[motor]** or **[eye]**, the default value of **[eye]** or **[motor]** will show on the screen.

Press **[+]** or **[-]** to choose one.

Then press **[confirm]** to confirm

OPERATING INSTRUCTION

4. Inflation and Deflation

Press **【P1】** or **【P2】** to choose a target pressure value

Press **【+】** or **【-】** to select target pressure.

Connect with tyre, ensure no air leaks, inflator will work automatically.

When inflation is finished, machine will stop automatically and BEEP to remind users.

Disconnect the air hose from tyre, finish inflation.

Remark:

1. Press **【i】** to enter the function setting mode. After select the unit, press **【i】** again to enter the **【OPS】** setting directly, press **【i】** thrice the device will quit out of the setting mode without save any selection.
2. When OPS function is on, device will inflate to target pressure plus OPS value first, then deflate to tyre pressure desired, for example: A final target of 32 psi or 2.2 bar with an OPS setting of 16 psi or 1.1 bar gives a sum of 48 psi or 3.3 bar. This sum of 48 psi or 3.3 bar is the Over Pressure setting for tyre. Tyre will inflate to the sum value and deflate to the final target pressure.
3. If tyre pressure is lower than 3 psi or 0.2 bar, device will not start automatically. Then press **【⊕】** for 2 second to start manually.

During inflation, device will check tyre pressure automatically, rolling bar will be on, and left to right means inflating, right to left means deflating.

Control panel functional key details

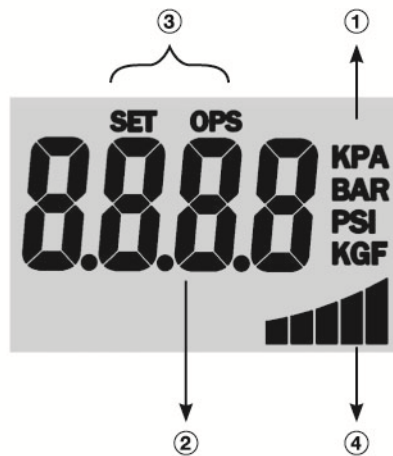
⋮
⊖ Reduce final target pressure

⊕ Increase final target pressure

i Function Select: Unit Change/OPS set

🚗 Function Select Confirm/Start to inflate/Stop. Used this button to start the inflation process when the pressure in the tyre is less than: 3 Psi, 20 Kpa or 0.2 Bar.

LCD display



6. OPERATING INSTRUCTION

6.1 COMPRESSOR UNIT a).S

TARTING:

- Check the main power, should be matched with the required power.
- Switch on the main power supply. MCB (20A).
- Turn the pressure switch knob fitted on the tank into position "1".
- The compressor is controlled by the pressure switch which stops it when the tank pressure reaches maximum value (170psi) and restarts it when it falls to maximum value (110psi).
- Load it to maximum pressure and check exactly how the machine is operating.

Note

^e The motor of this compressor is equipped with an automatic thermal breaker located inside the winding – this stops the compressor when motor temperature reaches excessively high values. If the breaker is tripped, the compressor will restart automatically after 10 to 15 minutes.

6.2. CONTROLLER UNIT

a) INFLATING/ DEFLATING TYPE:

- Switch on the selector switch
- Pre-Set the desired pressure by using + / - keys
- Connect the foot connector to the tyre (unit will inflate/deflate automatically)
- Wait for the beep signal
- Remove the connection from the tyre
- Use Tyre key for empty [Air less than 7psi pressure] tyre only.

7. MAINTENANCE SCHEDULE


a). Compressor

1. Before attempting any maintenance job on the compressor, make sure of the following.
 - Mains switch controller unit switch and pressure switch - all are in 'off' position.
 - No pressure in the air tank.
 2. Every 50 hours of working: dismantle the suction filter and clean the filter in element by blowing compressor air on it.
 3. The condensate water in tank must be desired every day by opening the drain valve under the tank.
 4. Oil change
 - First 100 hours of working, a full change of oil is recommended.
 - Unscrew the oil drain plug on the housing cover, allow all the oil to flow out and re-screw the plug.
 - Pour oil into the upper hole of the housing cover until it reaches the level indicated on the stick.
- s -
Check the oil level in the crankcase once in a week and topping up if necessary.

b). Tyre Inflator

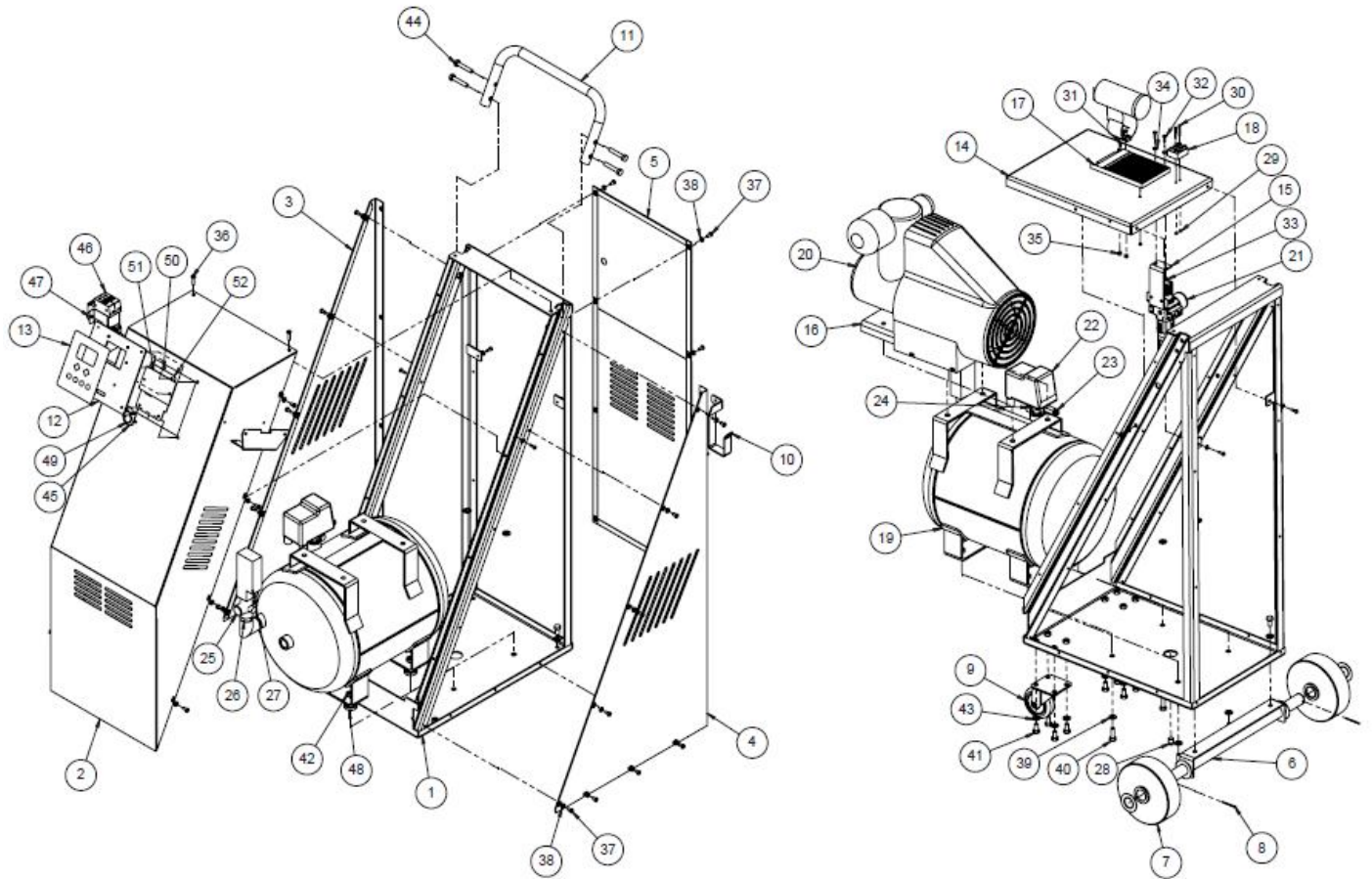
- Check the rubber washer in the foot connector at least once in a week.
- Check the electrical wiring at least once in a month
- Clean the Solenoid valve stem by compressor air.

8. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Air leak	Leak in the connection	Check the pneumatic Connection
The inflator works, But no air inflated	Obstruction in filters or in air system	Clean the filters and check the air tube
No display	Check power supply	Reconnect
Inflation does not start, although the pressure is set and the hose is connected with tyre	Air hose improperly connected	Check the hose connection, make sure that no air leaks
	Tyre pressure is below 0.2bar (3psi)	Press 
The unit deflates very slowly	The silencer plug on is blocked	Remove and clean the silencer plug
Er1	Pressure sensor broken	Power off, change pressure sensor
Er2	Unstable pressure, faulty hose connector	Replace hose connector or re-connect hose to the tyre
Er3	Connected Tyre pressure is too high pressure > 13 bar (188.5psi)	Stop inflating this tyre
Er4	Wrong connections at air inlet and outlet	Refer to wiring diagram and connect magnetic valve accordingly
Er5	Low Voltage	Check the power supply
Er8	Air supply lower than set inflate pressure	Stop inflating this tyre

Problem	Possible causes	Solution
Pressuredropintank	Leakage through joints, connections	At maximum pressure in tank, apply soap water solution on to all connections and joints. Look for bubbles and tighten connections or joints where leakage is visible
The compressor stops and does not start again	Poor electrical connection	Check electrical connection.
	Motor trips switch has cut in	Clean & tighten as necessary
	Motor windings burnt	Contact ATSELGI Service Technician
Motor shaft tight and does not rotate	Motor bearings failure	Contact ATSELGI Service Technician
	Seizure of piston Cylinder because of inadequate lubrication	Contact ATSELGI Service Technician
	Seizure of connecting rod with crank pin because of inadequate lubrication	Contact ATSELGI Service Technician
The compressor does not reach set pressure and over heat easily	Compressor cylinder head to valve flat gasket damaged	Contact ATSELGI Service Technician Dis-assemble head and replace broken
	Oil level low	Top up oil to correct level
Oil carry over in compressed Oil level high and breath valve	Oil viscosity too low	Change oil of recommended grade
	Breather not working properly	Clean breather & check again
	Piston rings to cylinder clearance excessive	Clean clearance and change if required
Compressor not stopping when maximum pressure is reached	Safety valve malfunction	Clean and change the safety valve

Exploded view / part list



9. PARTLIST

27	B.O.G.ELECTRO VALVE 330V AC	1	008944010	53	AC PIPE ASSY (NOT SHOWN IN THE DRG)	1	15 03 30720
26	REDUCER 1/2" BSP M X 1/4" BSPM	1	150480700	52	SOLENOID VALVE	1	1599W9008
25	CHECK VALVE VAYU RAC UNIT	1	A340010	51	ACRYLIC COVER	1	150483810
24	PLUG 1/4" BSP	1	150480370	50	PCB ASSEMBLY WITH SENSOR	1	1599W90003
23	SAFETY VALVE VAYU RAC UNIT	1	A340012	49	BUZZER	1	1599W90002
22	PRESSURE SWITCH VAYURAC UNIT	1	B185108	48	VIBRATION MOUNT-ETIBIC	4	150481260
21	FRC 1/4"BSP WITH AUTO DRAIN	1	150402150	47	MCB HOLDER	1	110472430
20	VAYU RAC UNIT	1	X340070	46	MCB;20A;DP	1	008927022
19	AIR TANK TI	1	150332770	45	BUZZER CLAMP	1	150483790
18	CONNECTOR(3WAY) MT12/12	1	00894682Z	44	BOLT HEX M8X45 8.8 ZYP FT	4	000906120
17	SMPS 12V	1	380411750	43	WASHER;PLATE M8 ZYP	6	000996058
16	COMPRESSOR MOUNTING PLATE-BIC	1	150483890	42	NUT;HEX;M8; ZYP	14	000948008
15	FRL CLAMP-BIC	1	150332870	41	BOLT;HEX;M8X16 8.8 ZYP	10	000906113
14	MOUNTING PLATE - BIC	1	150483900	40	BOLT;HEX;M8X25 8.8 ZYP	6	000906116
13	KEY PAD	1	1599W90001	39	WASHER SPRING M8 RECT ZYP	14	000996108
12	DISPLAY HOLDER	1	150332470	38	WASHER PLATE;M5;ZYP	44	000996056
11	HANDLE-BIC	1	150483850	37	STAR HEADED PAN SCREW M5X10;ZYP	44	000981328
10	HOSE CLAMP ASSY-BIC	1	150332860	36	SCREW SLOTTED .CH M5X20 ZYP	2	000983516
9	SWIVEL WHEEL DIA75 WO BRAKE	2	570400020	35	NUT;HEX;M5;ZYP	2	000948006
8	PIN SPLIT 1/8"X1 1/2"	2	000965306	34	WASHER;PLATE;M4 ZYP	12	000996055
7	WHEEL DIA 150X45 - BIC	2	150483880	33	NUT;HEX;M4;ZYP	12	000948005
6	REAR WHEEL HOLDER ASSY	1	150332830	32	STAR HEADED PAN SCREW M4X12;ZYP	10	000981320
5	BACK COVER ASSY-BIC	1	150332790	31	SCREW CH;M3X8 ZYP	2	000983462
4	SIDE COVER RH-BIC	1	150332820	30	SCREW CH;M3X25 ZYP	2	000983469
3	SIDE COVER LH-BIC	1	150332810	29	NUT;HEX;M3;ZYP	4	000948004
2	FRONT COVER-BIC	1	150332800	28	VALVE ASSY;DRAIN	1	020515411
1	BASE FRAME ASSY-BIC	1	150332780				
Sl.No.	DESCRIPTION	QTY.	DRAWING No.				

9.1.PARTLIST – OLD MODEL

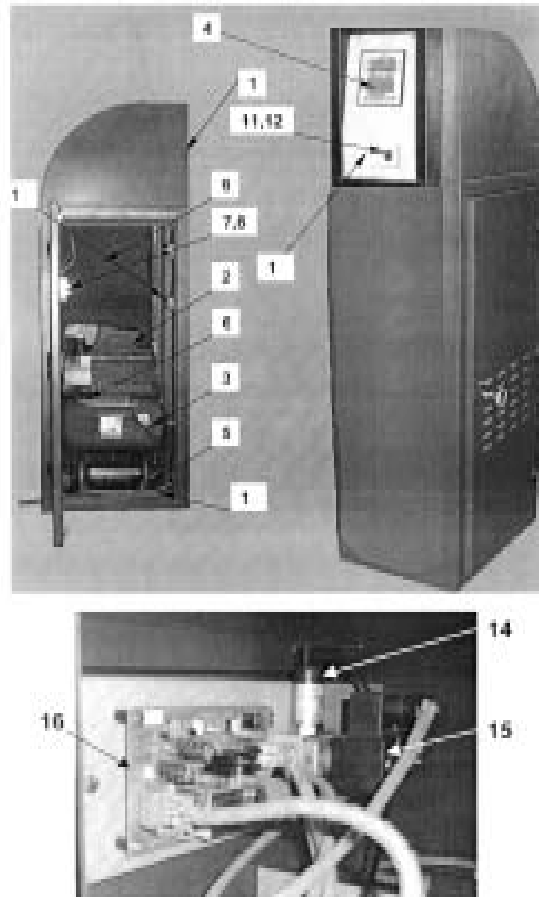
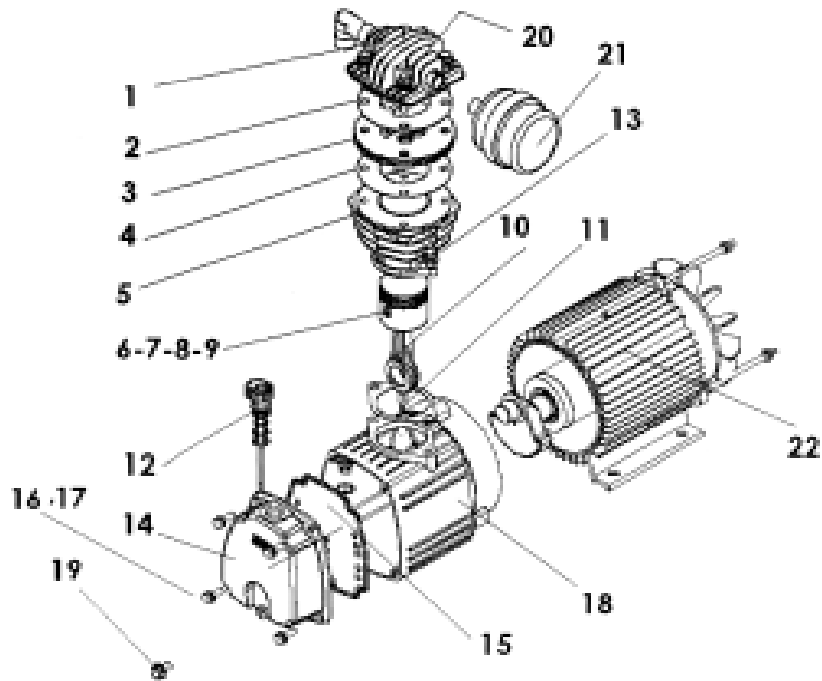


Fig3
PARTSLISTFORTYREINFLATORBULTIN
COMPRESSOR

Sl.No	DESCRIPTION	QTY.	ITEMCODE
1	CABINET	1	150330960
2	COMPRESSORVAYURAC2HP	1	340303930
3	TANKCOMPRESSOR	1	150330710
4	CONTROLLERWITHOUTSMPS	1	150402410
5	VIBRATIONMOUNT	4	150481260
6	ACPIPEASSY	1	150330720
7	FUSE,2A	1	008927011
8	MCB,20A	1	008927022
9	RETRAIIDENTFIBRE	2	000999821
10	HOSEASSYNYLON7mWITH S.E.F.CONNECTOR	1	150400180
*13	BUZZER	1	150402030
14	PRESSURETRANSMITTER	1	150400260
15	SOLENOIDVALVE2/2NC	1	150402300
16	SMPSBOARD	1	150302240
17	FRC1/4"BSP	1	150402150
18	PU8HOSE 6m	1	200450130
19	BOLT,HEX,M6X20	4	000906086
20	NUT, HEX, M6	4	000948007

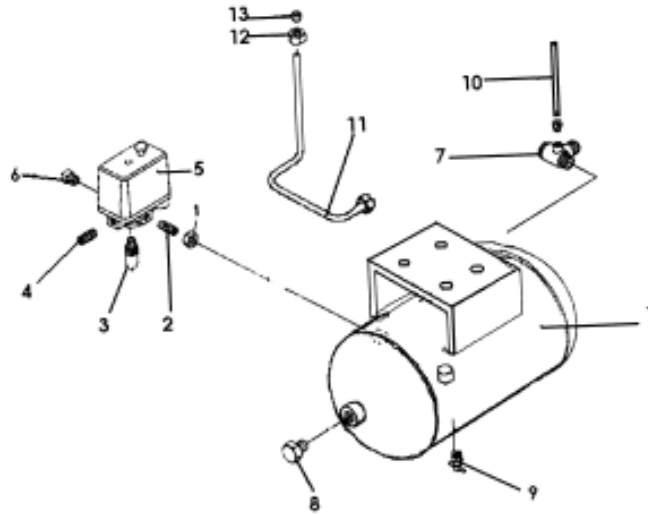
*Notshowninthefig

Compressor part codes



Sl.No	DESCRIPTION	QTY.	DRAWING NO	DRAWING NO
I	VAYU2HP	1	X340065	X340070
1	CYLINDERHEADASSY	1	340302440	340303870
2	GASKETVFTOHEAD	1	340401830	340401830
3	REEDVALVEASSY	1	340302260	34030226A
4	GASKETVFTOCYLINDER	1	340401820	340401820
5	CYLINDER	1	340302410	340303850
6	RINGTPC	1	00041589A	00041589A
7	RINGSC	1	00041590A	00041590A
8	RINGSOC	1	00041683A	00041683A
9	PISTONANDGPIN	1	340400920	34040091A
10	CONNECTINGROD	1	340301650	340303920
11	GASKETCYLINDERTOCC	1	340403130	340403130
12	DIPSTICKASSY	1	34040010A	340400450
13	BOLTM6X20*/M8X20*	2	**000906115	**000906115
14	C/CASECOVER	1	340301510	340303890
15	DIAPHRAGM	1	340401020	340304190
16	BOLTM6X16	4	000906084	000906084
17	M6WASHER	4	000996058	000996058
18	CRANKCASE	1	340100480	340303830
19	BOLTM8X12	1	000906111	000906111
20	BOLTM6X35*/BOLTM8X35*	4	**000906118	**000906118
21	AIRFILTER	1	A020398	A340011
22	ELECTRICMOTOR	1	A100166	A100176

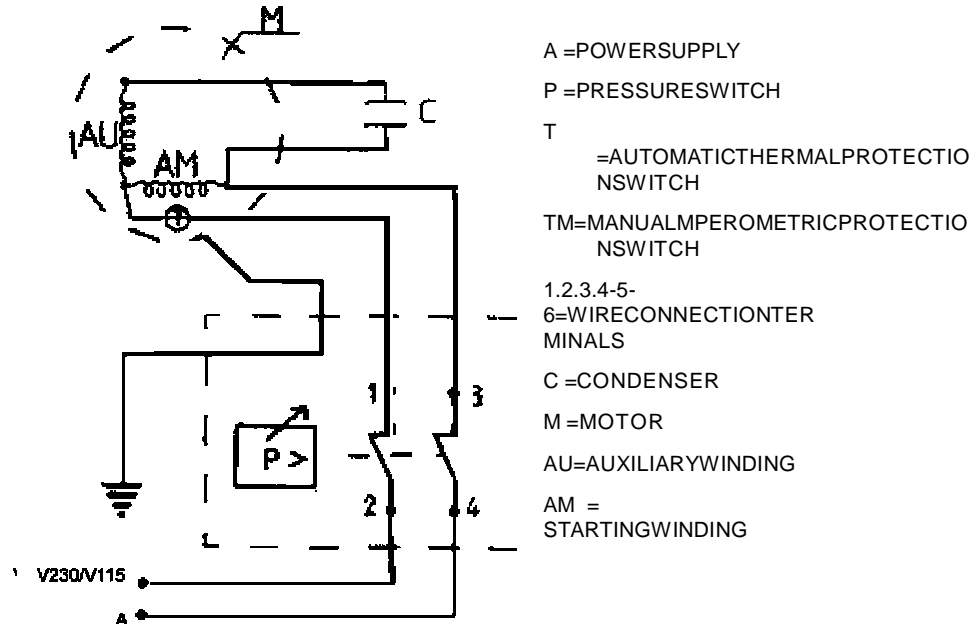
Air tank assy



Sl.No	DESCRIPTION	QTY.	ITEMCODE
1	TANK,COMPRESSOR30LBIC	1	150330710
2	NIPPLE1/4"X1/4"	1	020514840
3	SAFETYVALVEVAYURACUNIT A340012	1	340403440
4	MALEELBOW1/4"BSP	1	200450110
5	PRESSURESWITCHVAYURACUNIT	1	B185108
6	PLUG1/4"BSP	1	150480370
7	CHECKVALVEVAYURACUNIT NRVA340010	1	340403200
8	PLUG1/2"BSP	1	110510330
9	VALVEASSY,DRAIN	1	020515411
10	AIRHOSEPU6.075M	1	120430571
11	ACPIPEASSY	1	150330720

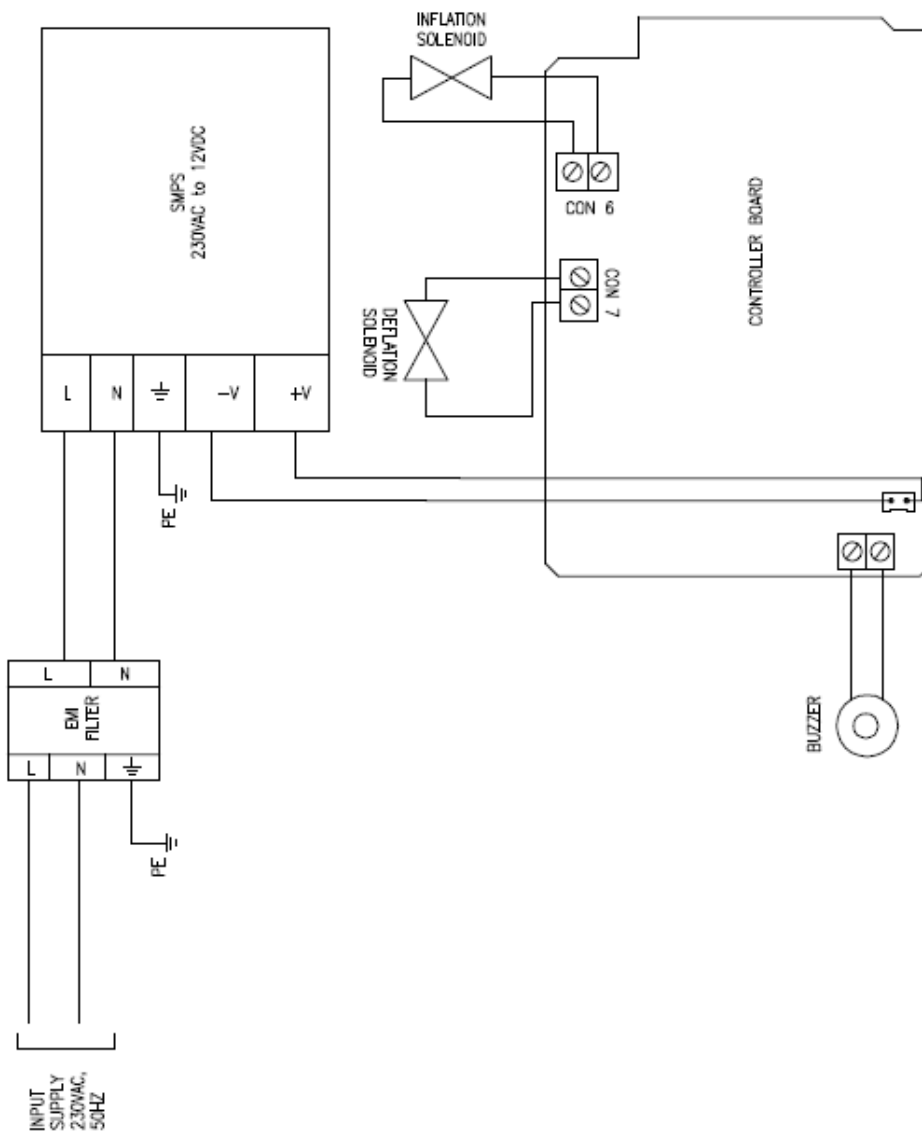
10. ELECTRICAL WIRING DIAGRAM

a). Compressor



b) Controller

11. ELECTRICAL LINE DIAGRAM



12. DO'S & DON'TS

DO'S

1. COMPRESSOR

- ✓ Keep the air filter clean
(Air filter can restrict the moisture from entering and passing through the unit to a specified level only. Hence ensuring moisture free air from the compressed air source itself is healthy for the product.)
- ✓ Drain compressor or air receiver daily
(2&3. Dirt and moisture contaminants the air will damage and reduce the life of solenoid valves and other related elements)
- ✓ Call nearby dealer for air pressure calibration of controller periodically
(Calibration will ensure correct pressure of air medium working in the unit while a cycle of deflating or inflating is in process)
- ✓ Keep controller door closed when not in operation
(To prevent dust from entering the box while the unit is not in operation)
- ✓ Call nearby dealer/branch if controller malfunctions (Servicing of the controller has to be entrusted to authorized personnel of ELGI only)
- ✓ Regularly check for leaks in the air hoses
(Leakage will lead to incorrect feedback mechanism of air pressure at different stages of a deflating or inflating cycle)
- ✓ Check if auto drain is working periodically

DON'TS

- Do any repair work while the unit is ON condition
(This is to ensure safety for the unit and the personnel working with the product)
- Open the Controller for service
(Controller is the heart of the unit and servicing the same without adequate knowledge is not recommended)
- Meddle with the wiring inside the main box
(Wrong connection will lead to electrical failure of the product)
- Use compressor air in parallel with any other equipment (To ensure safety and long life of the product it is essential that any other equipment is not run in parallel while this product is in operation)

ATSELGIWARRANTYPOLICY

1. This warranty policy is applicable to the equipments supplied by ATSElgi Limited. (hereinafter called the company)
2. The scope of the warranty excludes normal wear & tear of parts, rubber components, electrical items, consumables (oil etc), gauge, wheels, filter, battery, glass items, lock, cable, keypad, printer ribbon, Printed Circuit Board, cartridge, probe etc. from the purview of our standard warranty.
3. If any defects should be found in the supplied equipment within the term of warranty stipulated above, the company's only obligation is to repair or replace, at its sole discretion, any part shown to be defective with a new part or equivalent, free of cost, when the company acknowledges that such a defect is attributable to faulty material or workmanship at the time of manufacture.
4. The company is responsible only till the point of first sale to the ultimate customer and not thereafter and warranty is available only if the purchases are either from the company or its authorized dealers; The company disowns liability on the purchase of any second hand machine or purchase other than from authorized dealers.
5. The liability of the company is limited to the products sold and the company shall not be liable for any indirect, incidental, punitive, special or consequential damages arising out of or in any way connected with the usage of the products or information in the said manual.
6. The warranty shall not apply:
 - a. for any defects or non-compatibility that the buyers should have known at the time of purchase of the equipment i.e., the company is not responsible if the equipment is used for purpose other than it has been designed for.

- b. any defect caused by misuse, negligence, abnormal use or insufficient care.
- c. if the equipment is modified or altered.
- d. if the equipment is not installed or not maintained as prescribed.
- e. if the equipment is not operated in accordance with operator/ service manual.
- f. if defects caused by electrical fluctuation, vibration, sound or any other external factor like pollution etc.
- g. if assembled, disassembled, adjusted, mishandled or repaired by any person other than ATSElGI Engineer or ATSElGI authorized technician.
- h. for certain specialized products operating the same without receiving proper training as stipulated for by ATSElGI.

The aforesaid instances are illustrative and not exhaustive and the company reserves its right to add additional terms as and when desired.

- 7. The buyers should take care of the following when returning an equipment alleging defect within the period of warranty
 - a. a copy of the invoices shall accompany the equipment for which warranty is claimed
 - b. it is packed in the original packing with which it was sold to the said buyer.
 - c. A brief description of the defect/problem.
 - d. The cost (inclusive of insurance, if any) of transportation of goods to rectify such defects shall be borne by the buyer only.
- 8. ATSElGI reserves its right to accept/reject any defect/return.
- 9. Any dispute pertaining to the said manual or anything stated therein or any product stated therein is subject to the exclusive jurisdiction of the courts in Coimbatore.

