

# **EN Series Screw Air Compressor**

Operation, Maintenance and Parts Manual





# **Product Manual**

**EN Series**

**Electric Powered Screw Air Compressor**

**EN 37 - 125**

208-230/460V, 3Ph, 60Hz

©

**ELGI EQUIPMENTS LIMITED**

Coimbatore, TN - 641 005

Part / Document No. 019000745

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## Machine Identification and Sale Record



Owner's name /	:	
Company name	:	
Phone number	:	
Contact person	:	
E-Mail address/	:	
Phone number	:	
Model	:	
Fab. No.	:	
Year of manufacture	:	
Motor	:	.....kW (HP)
Capacity	:	.....m <sup>3</sup> /min (cfm)
Rated pressure	:	.....bar.g (psi.g)
Date of delivery	:	
Date of commissioning	:	
Dealer name/address	:	
	:	
	:	
Dealer's signature	:	

### NOTE

The warranty on the compressor is valid only if all the details above are filled in and the dealer stamps and signs this page. To reach Regional Office/Head Office of ELGi within seven days of commissioning date.

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ELGi, established in 1960, designs and manufactures a wide range of air compressors. The company has gained its reputation for design and manufacture of screw compressors through strategic partnerships and continuous research and development. Over the years, it has emerged as a multi-product, multi-market enterprise providing total compressed air solutions to all segments. ELGi's design capabilities translated into a wide range of products ranging from oil-lubricated and oil-free rotary screw compressors, reciprocating compressors and centrifugal compressors.

ELGi is one of the few companies in the world capable of manufacturing wide range of air ends and compressor packages. ELGi has most modern manufacturing facilities with high precision grinding machines, turning centres, CNC horizontal and vertical machining centres and also the latest self measurement technology to maintain precise, aerospace manufacturing tolerances. ELGi's manufacturing plants are ISO and EOHS certified.

Over two million ELGi compressors are powering business in 70+ countries worldwide. The company offers a strong sales and service network with a well-knit distribution network of dealers and distribution, worldwide. ELGi has its own manufacturing operations in India, Italy and USA with subsidiary offices in Australia, Bangladesh, Brazil, China, Indonesia, Italy, Malaysia, Middle East, Sri Lanka and Thailand. The company is fast expanding its global footprint, attracting distributors and customers with its new generation products.

### Need help...?

#### In India

You can contact ELGi customer care system (ECCS) to take care of customer complaints. The ELGi CCS works for six days a week from 08:30 to 21:30 IST (Monday to Saturday). The complaints can be logged by calling any of the following toll free numbers or by e-mail.

**Toll free** : **1800 425 3544**

**E-Mail** : [ccs@elgi.com](mailto:ccs@elgi.com)

**Website** : [www.elgi.com](http://www.elgi.com)

Before making service request for your compressor, keep ready the details printed on the name plate of the compressor and machine identification and sale record of this manual. When ordering spare parts, refer to the lists provided in the parts manual and identify the part number. Specify the part number and quantity, in addition to the name plate details.

Refer "ELGi services" for more details about ECCS under chapter "Maintenance".







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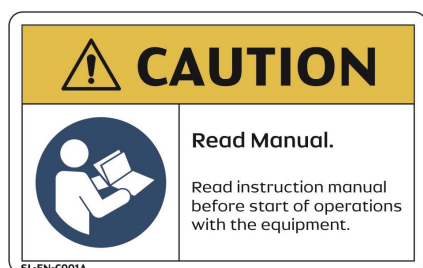
This operation and maintenance manual has been specially designed keeping the customer in mind so that the person can get the most out of this EG compressor. Before starting the compressor, it is requested that the manual should be read thoroughly. It contains vital information about installation, commissioning, operation and useful tips on maintenance to keep the compressor as good as new, year after year. The manual has been prepared with utmost care to help you understand the various systems of the compressor, along with descriptions, information and illustrations.

Following chapters are provided to help operate the compressor in its best way.

- **Safety** - safety precautions that must be followed while using the compressor.
- **Technical specifications** - technical details about the compressor.
- **Installation and commissioning** - all site requirements, procedures to be followed during installation, commissioning, preservation etc.
- **Functional description** - parts, their function and working.
- **Operating instructions** - to operate the compressor properly.
- **Maintenance** - how to do the maintenance for the compressor and their intervals.
- **Troubleshooting** - identification and solving the problems.
- **Decommissioning** - how to decommission the compressor, its disposal etc.
- **ELGi services** - services from ELGi: CCS, air audit, spare parts
- **Appendix** - conversion tables, torque values, service log book

Refer to the parts manual to identify the part number of the required spare. Mention the Fab number, model and part number while ordering.

**This manual must be made available to the compressor operating and maintenance personnel at all times.**



### 2.1.1 Definitions and symbols

This information is related to your safety and also to prevent any problems relevant to the equipments used. To help recognize this information better, the symbols are illustrated in section "**safety**".

All the information, illustrations and specifications in this manual are based on the latest product information at the time of preparation of the manual. Product improvement is a continuous process in ELGi. The details in this manual are likely to change without notice and ELGi reserves the right to incorporate such changes.

#### NOTE

*Note clarifies procedures or conditions which may otherwise be misinterpreted or overlooked. Note may also be used to clarify apparently contradictory or confusing situations.*

#### WARNING

*Warning calls attention to dangerous or hazardous conditions inherent to the operation, cleaning and maintenance of the compressor which may result in fatal accident and personal injury of the operator or other staff*

#### CAUTION

*Caution is to draw attention to a procedure which, if not done correctly can lead to compressor damage.*

Welcome to the ELGi customer family. ELGi compressors are the source of compressed air in various segments across the globe.

ELGi compressors are known for:

- Greatest reliability
- Fewer maintenance intervals
- Ease of use
- Highest safety

The ELGi screw compressor is designed to deliver:

- High energy efficiency
- Low maintenance cost
- High discharge air quality

All the above factors assure a low life-cycle cost.

The rotors incorporate a specially designed eta-v profile- ELGi patented profile-which emphasizes on improving reliability, performance, and efficiency. The Eta-v profile is the latest and the most energy efficient profile in the industry globally, assuring consistent performance during the entire life of the compressor. ELGi screw air compressors incorporate a compact design and compressor run with low noise or vibrations. The capacity control system ensures optimum air intake during start-up, normal running, and unloading stages, minimizing power consumption. The oil separation system ensures that maximum oil is separated from compressed air, ensuring the best air quality with very little oil carry-over.

### Uptime

At ELGi, we are changing the way you look at compressed air systems. It's no longer just about delivering air. It's about delivering uptime. Our uptime design ensures that the compressors run cooler, cleaner, and longer with longer service intervals. The uptime components deliver the best in quality and enable your compressor to run smoothly, efficiently, and profitably. With uptime assurance, we back our pledge, with industry-leading warranties, parts availability, loaner compressors, and call centres staffed by experts. We thank you for purchasing an ELGi compressor and assure you the best service during the entire life of the compressor.

### EN SERIES

Your EN SERIES compressor belongs to a family of rotary screw compressors from ELGI. The compressor has only two moving parts - the rotors - which are separated by a thin film of oil to prevent wear and increase compressor reliability.

The screw compressor technology ensures that output capacity does not diminish even after many years of operation. It involves a continuous flow of air through helical cavities in the screw so that compressed air delivery is pulsation free.

EN SERIES compressors ship in a compact design and are self-contained. The absence of reciprocating parts helps the compressor run without noise or vibration. The discharge temperature of the coolant oil is low, less than 195°F (90°C) under normal conditions, and therefore, carbonized oil does not form in the compressor.

### Salient Features

- Two-stage air filter
- Improved air filter life cycle
- Noise-free package suitable for in-house operations
- High volumetric efficiency
- Efficient air-oil separation by OSBID (Oil Separation By Impact and Deceleration)
- Reliable fan that works even at high temperatures
- Robust cooling system
- Industrial designed canopy
- Compact and hardly space-intensive
- Split-type oil coolers for easy serviceability
- Flush type panels for easy handling
- Anti-vibration mounts for restricted vibration
- Increased life of consumables
- Zero-leak flanged joints.
- Oil carry-over < 3 ppm
- Advanced Neuron controller
- Globally certified product - CE / UL and other country specific approvals.

The operator must follow the safe working practices, instructions, procedures that this manual describes for safe operation. The maintenance personnel must be adequately trained, and have read and thoroughly understood this 'Operation and maintenance manual'. Decals are affixed at specific locations of the compressor and they illustrate very important safety precautions.

### 2.3.1 Precautions during installation

- Ensure that you fasten all loose parts before lifting. Select the appropriate lifting equipment by considering the local safety regulations, size and weight of the compressor. Operate the lifting equipment carefully within the safe operating limits. Ensure all necessary personal protective equipment's (PPEs) is close at hand during this operation.



- Maintain a cool and clean ambient for the compressor and ensure that the air inlet is not obstructed. Make arrangements to reduce the moisture entry through the incoming air.
- Remove protection such as caps, plugs, desiccant bags before connecting the air line pipes.
- Remove the red colored protective clamps from the airend and motor while commissioning the compressor.



- Do not use frayed, damaged or worn hoses. Distribution pipes and connections must be of the correct size and suitable for working pressure.
- Make sure that the aspirated air by the compressor is free of flammable fumes, vapors and particles, to prevent internal fire or explosion.
- For remotely controlled compressors and auto-start compressors, provide a clear caution stating: **"DANGER" – Remotely controlled machine and will start without notice**



- Ensure the operator is located far away from the intake of the compressor.
- Position the after-cooler discharge pipe in a way that it is free to expand under heat and is not in contact with or close to flammable materials.
- Do not exert external force on the air outlet valve and keep the connected pipe always free of strain.
- Make available adequate cooling air must be made available for the compressor particularly air cooled compressors. Make sure that exhausted air does not circulate back to the intake or cooling system.
- Make the electrical connections according to the legal standards and earth the compressor suitably. Provide a sufficient number of fuses and other protective devices to protect the compressor against short circuits. Good practice is to provide an isolating switch nearby the compressor.
- Install manual valves behind non-return valves (NRV) to isolate each compressor in multi-compressor systems. Do not rely on NRV for isolating pressure systems.
- Do not bypass, remove or adjust the safety devices or other attachments residing on the compressor. Every installed pressure vessel or auxiliary outside the compressor should have pressure relieving device or devices, as required.



- Danger! Be aware that compressed air used for breathing or food processing must meet O.S.H.A.

1910.134 or F.D.A. 21 C.F.R. 178.3570 regulations. Failure to do so may cause severe injury or death.

- Insulate or use protective guards to cover pipes or other parts that may exceed 80°C (176°F). High-temperature pipes must have a clear marking as potentially dangerous.
- Position the compressor on level surface. In case of inclined surface, contact ELGi.
- Do not allow compressed air to come in contact with food and related items unless they are compressed air-treated specifically.
- Be aware that this air compressor is intended for generating only industrial-use compressed air.

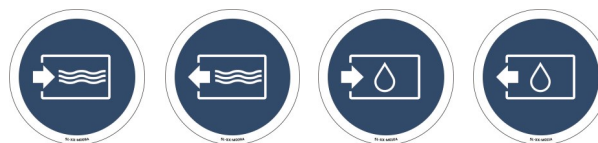
### 2.3.2 Precautions during operations

- When switching on remotely controlled compressors ensure that no one is checking or working on the compressor at that time.
- Before starting, ensure that no tools or any loose parts remain inside the compressor.
- Do not operate the compressor if a possibility exists that it could inhale flammable or toxic fumes, vapors or particles.
- Do not operate the compressor below or above its operating limits.
- Wear ear protectors if you work in an environment where the sound pressure level reaches or exceeds 90 dB (A).
- Keep all the compressor doors shut during operation. For carrying out routine checks, the doors should open only for short durations not more than 10 minutes. Wear ear protectors when opening a door.
- Keep hands, feet, floors, controls and walking surfaces clean and free of water or other liquid to minimize the possibility of slips and falls.

### Pressure release

- Know that annual servicing of the safety valve is necessary. It should be checked at the prescribed pressure for operation.
- Use correct tools for maintenance and repair work. Do not allow the manufacturers' rated safe operating pressure to exceed for pipes, valves, filters and other fittings.
- It is hazardous to point the compressed air directly towards any personnel. Keep personnel out of the line of the discharge air when opening hoses or other points of compressed air discharge.
- Use only the correct type and size of hose end fittings and connections. When blowing through a hose or airline ensure that the open end stays securely. A free end will whip and may cause injury. Make sure to

depressurize a hose fully before disconnecting it.



- Release all the pressure in the compressor system before servicing or performing any maintenance activity.
- Do not engage in horseplay with air hoses. Serious injury or death may result.
- Do not use air at a pressure greater than 2.5 bar.g (36 psi.g) for cleaning purpose.
- Open the oil fill cap only when the compressor is not running and is not pressurized. Shut down the compressor and bleed the receiver tank to zero internal pressure before removing the cap.

### Fire and explosion



- Clean up spills of lubricants or other combustible substances immediately.
- Shut down the compressor and allow it to cool down before checking or adding oil. Remove sparks, flames and other sources of ignition away from the compressor.
- Do not permit smoking in the vicinity of the compressor.
- Do not use flammable solvents for cleaning purposes.
- Keep electrical wiring and other terminals in good condition. Replace any wiring that has cracked, cut, abraded or otherwise degraded insulation. Keep all terminals clean and tight.
- Keep grounded conductive objects such as tools away from exposed live electrical parts like terminals to avoid arcing, which might serve as a source.
- Keep oily rags, trash, dry leaves, litter or other combustibles out of and away from the compressor.
- Do not operate the compressor without a proper flow of cooling air or with an inadequate flow of lubricant or with a degraded lubricant.
- Do not attempt to operate the compressor in a hazardous environment of any classification unless the compressor has been specially designed and manufactured for explosive applications.

## Moving Parts



- Rotating fan blades can cause serious injury. Disconnect power supply before attempting service.
- Keep compressor doors closed except when servicing or during maintenance. The sound damping material on the inner side of the compressor body should not be removed or tampered with.
- Wear snug-fitting clothing and tie long hair when working around the compressor, especially when hot or moving parts such as the cooler, the airend, the thermal valve, the main motor or the fan motor are exposed.
- Keep hands, arms and clothing away from couplings, fans/belts and other moving parts.
- Do not attempt to operate the compressor with the fan guards, coupling guards/belt guards or other guards removed.



- Keep hands, feet, floor, controls and walking surfaces clean and free of fluid, water or other liquids to minimize the possibility of slips and falls.

## Hot surfaces



- Avoid bodily contact with hot oil and hot surfaces like cooler, pipes etc.
- Keep all parts of the body away from all points of air discharge.
- Keep a first aid kit handy. Seek medical assistance promptly in case of injury. Do not ignore small cuts and burns.

## Toxic and irritating substances

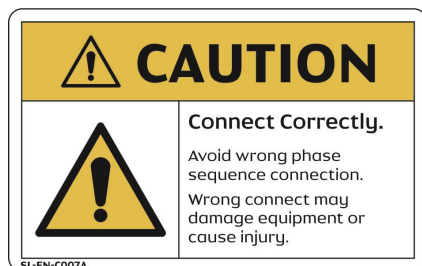
- Do not use air from the compressor for breathing.
- Always wear safety equipment while operating the compressor. Refer OSHA safety standards.
- Do not allow compressed air to come into contact with any edible items.
- In the event of ingestion of oils, coolants or lubricants used in the compressor, seek medical treatment promptly. In case you come in contact with such substances, wash with soap and water. Use MSDS for oil to know more on this.
- If warm cooling air from the compressor is being used in air heating systems, e.g. to warm up a work room, take precautions against air pollution and possible contamination of the breathing air.

## Electric shock

- Keep all parts of the body and any handheld tools or other conductive objects away from exposed live parts of the electrical system.
- Stand on a dry or insulating surface and do not contact any other part of the compressor when making adjustments or repairs to exposed live parts of the electrical system.







- Before switching on the compressor ensure that proper earthing is done as per recommendation.
- Make all adjustments or repairs with one hand. This minimizes the risk of creating a current path through the heart.
- Conduct repairs only in a clean, dry, well-lit and ventilated area.
- Do not leave the compressor unattended with open electrical enclosures. If necessary to do so, disconnect the power to the compressor at the source and lock it out so that power is not inadvertently restored.
- Disconnect, lock out, and tag the power source prior to attempting repairs or adjustments, turning the compressor manually or handling ungrounded conductors.
- All electrical installation must be in accordance with recognized electrical codes and any local health & safety codes.
- Recognize that only authorized and qualified trained personnel should carry out any electrical work on the compressor.
- Regularly check that all electrical connections are tight and in good condition.

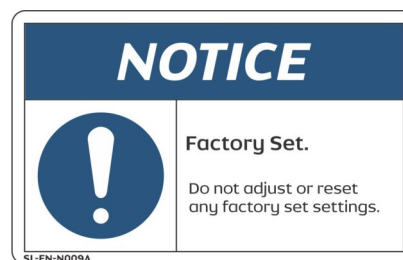
### Periodically check whether

- All guards are in place and securely fastened.
- All hoses and pipes inside the compressor are in good condition, secure and not rubbing against each other.
- Any leaks exists.
- All fasteners are tight.
- All electrical leads are secure and in good order.
- Safety valves and other pressure relief devices are not obstructed by dirt or paint.
- Air outlet valve, i.e. pipes, couplings, manifolds, valves, hoses, etc. are in good repair, free of wear or abuse.
- The air-oil tank is properly grounded.

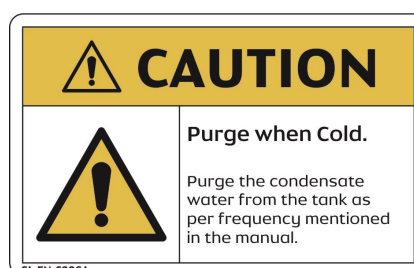
### 2.3.3 Precautions during maintenance

- Use safety glasses and incorporate safe working practices before maintenance work.
- Use appropriate tools for all maintenance works.

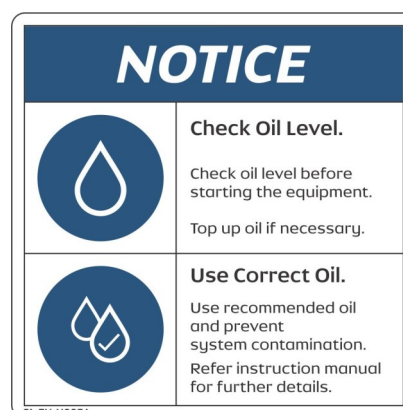
- Use only genuine spare parts. Refer the **section "Use genuine spare parts"** in **"Maintenance"** chapter.



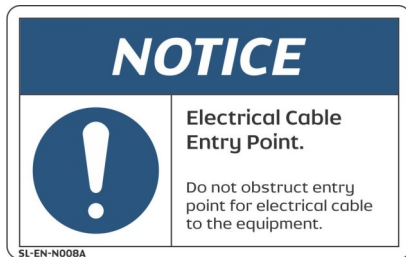
- Ensure that the compressor is cooled down before maintenance is performed.



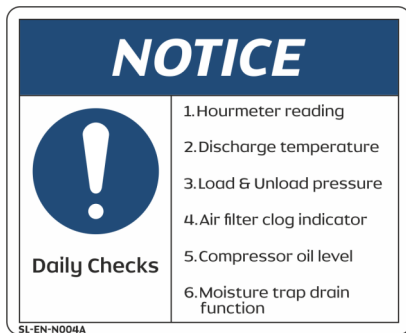
- Springs under tension or compression store energy. Uncontrolled release of this energy can cause serious injury or death. Be cautious while performing the maintenance of components loaded with springs (for example minimum pressure valve, safety valve etc.).
- Display a warning sign that says **"Maintenance under progress, don't switch on"** near the start switch.
- Isolate the compressor from the air line (discharge) and disconnect the power by opening and locking the isolating switch before maintenance.
- Prior to attempting repairs or adjustments, disconnect the power at the source and verify at the compressor that the circuits have de-energized. This minimizes the possibility of accidental start-up or operation, especially when the compressor is remotely controlled.
- Open the oil filler cap only when the compressor is not running and is not pressurized. Shut down the compressor and bleed the receiver tank to zero internal pressure before removing the cap.



- If you are going to switch on remotely controlled compressors must ensure that nobody is checking or working on the compressor at that time. A warning sign near the equipment's start button is mandatory.
- Wait up to five minutes to ensure that the air in the air-oil separator tank is released to start routing maintenance.

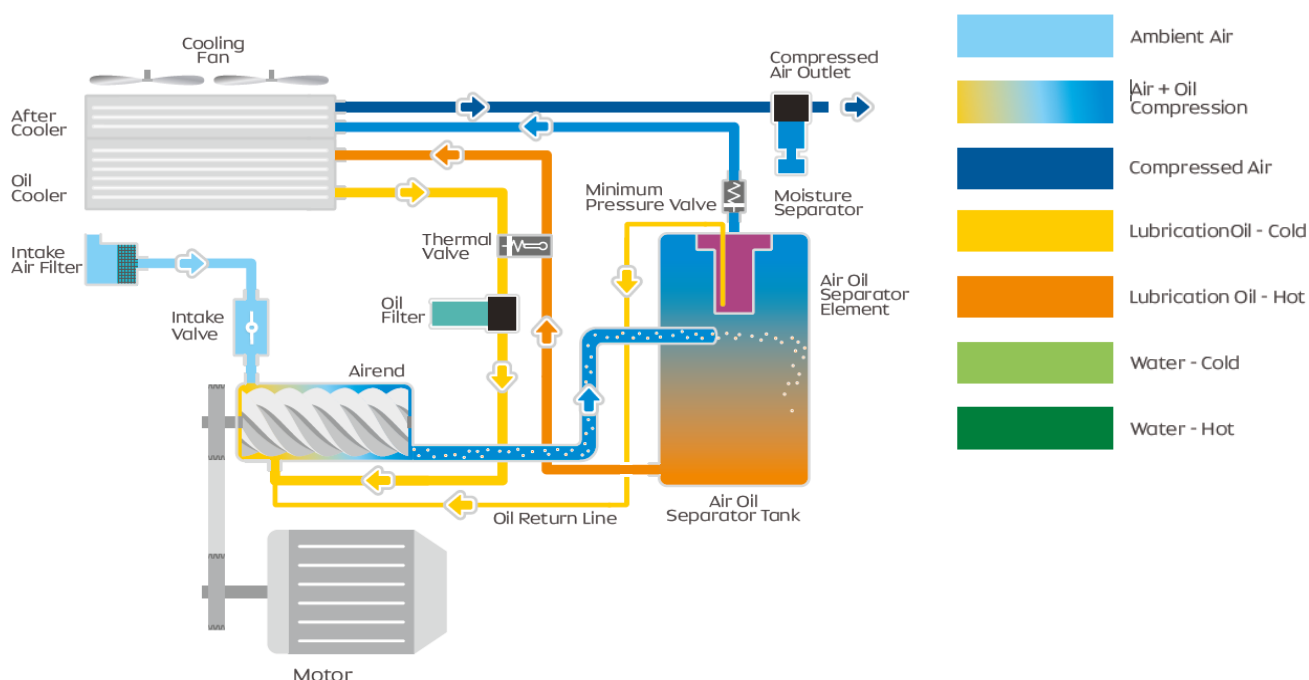


- Vent all internal pressure prior to opening any line, fitting, valve, drain plug, connection or other components such as filters. Vent pressure by popping up the safety valve.
- Display a maintenance chart near the compressor to easily identify the maintenance intervals of regular service items.





## 2.4 Functional description



**Figure 1. Screw compressor systems - Schematic diagram**

### 2.4.1 Air circuit

Atmospheric air enters into the airend through the air intake system. The intake filters (pre filter and air filter) prevent the entry of foreign particles (such as dust) into the airend. Dust and micro particles above 10 microns are separated by the pre filter and particles above 3 microns are filtered off by the air filter. The intake valve regulates the amount of air sucked into the airend. The opening and closing of the intake valve is controlled by the pneumatic pulse line actuated by the electrically controlled solenoid valve.

The filtered air enters into the airend where it mixes with the injected oil. The injected oil acts as a coolant to maintain optimum temperature. It also seals the leaks between the rotors and the housing and lubricates the bearings and gears. The airend consists of two counter-rotating intermeshed helical screws — the male and female rotors — which are driven by an electric motor. The air-oil mixture is trapped between the rotors of the airend and is progressively compressed.

After being compressed, the air-oil mixture enters into the air-oil separator tank, with high velocity, where it undergoes a unique 3-stage separation process to remove maximum oil content. This highly efficient 3-stage separation process uses the impact velocity of the air-oil mixture along with the OSBID process to make the mixture very lean. The final stage of this separation consists of passing the lean mixture through the air-oil separator element to ensure an oil content of 3 ppm and less in the air.

The oil separated and collected in this element is then returned to the airend through the scavenging line. The air passes through a minimum pressure valve (MPV). It maintains a minimum differential pressure required for circulation of oil within the compressor unit. The compressed hot air is cooled in the after-cooler. .

### 2.4.2 Oil circuit

The separated oil in the air-oil separation tank flows into the airend. The oil either diverts to the oil cooler or oil filter or both depending upon the temperature. The thermal valve governs and controls the oil flow path. The oil before being injected into the airend is filtered. An orifice residing in the oil flow path towards the airend controls oil flow. Any small quantity of oil, separated and stored in the separator element, enters into the airend through the scavenging line. The whole oil circulation circuit in the compressor is operated solely by the differential pressure maintained by the minimum pressure valve (MPV) and doesn't require any additional pump.

### 2.4.3 Drive system

The airend is powered by an electric induction motor through a belt and pulley. When the compressor is turned ON, the motor is started in star mode and it takes 6 to 9 seconds to change over to delta mode. During this period, the intake valve closes and thus the motor starts without load. In delta mode, the motor speed stabilizes, the solenoid valve energizes after 10 seconds of changeover to reduce motor load, the blow down valve closes, the intake

valve opens and the compressor starts loading. This ensures very little starting load. Next, the intake valve opens and the system starts building up pressure. Anti-vibration mountings reside below the airend and the motor. This configuration reduces the transmission of vibration from both the airend and motor to the structure, reducing noise and ensuring reliability of the parts mounted on the structure.

#### **2.4.4 Control system**

Depending on the demand for compressed air from the application at a particular time, the compressor needs to respond accordingly. The compressor, therefore, operates in either loading or unloading mode to meet this requirement. The primary objective of these modes is to save energy and reduce wear and tear on the machine. The control system ensures a smooth start without overloading the motor.






The compressor is started in star mode, during which most of the compressed air is vented to the atmosphere. This mechanism helps prevent overloading of the motor. In delta mode, the motor speed stabilizes, the solenoid valve energizes after 10 seconds of change-over to reduce load on the motor, the blow-down valve closes, and the compressor starts loading.

When the receiver pressure reaches the maximum limit, a signal arrives at the solenoid valve from the control system. Next, the inlet valve actuates and closes, and the compressor runs in unloading mode. If unloading mode continues for more than 5 minutes, i.e., no compressed air is consumed and thus no decrease in pressure occurs, the system stops and switches to standby mode. If a drop in pressure — ♦ ♦ ♦ — occurs in the receiver, the compressor returns to loading mode automatically.

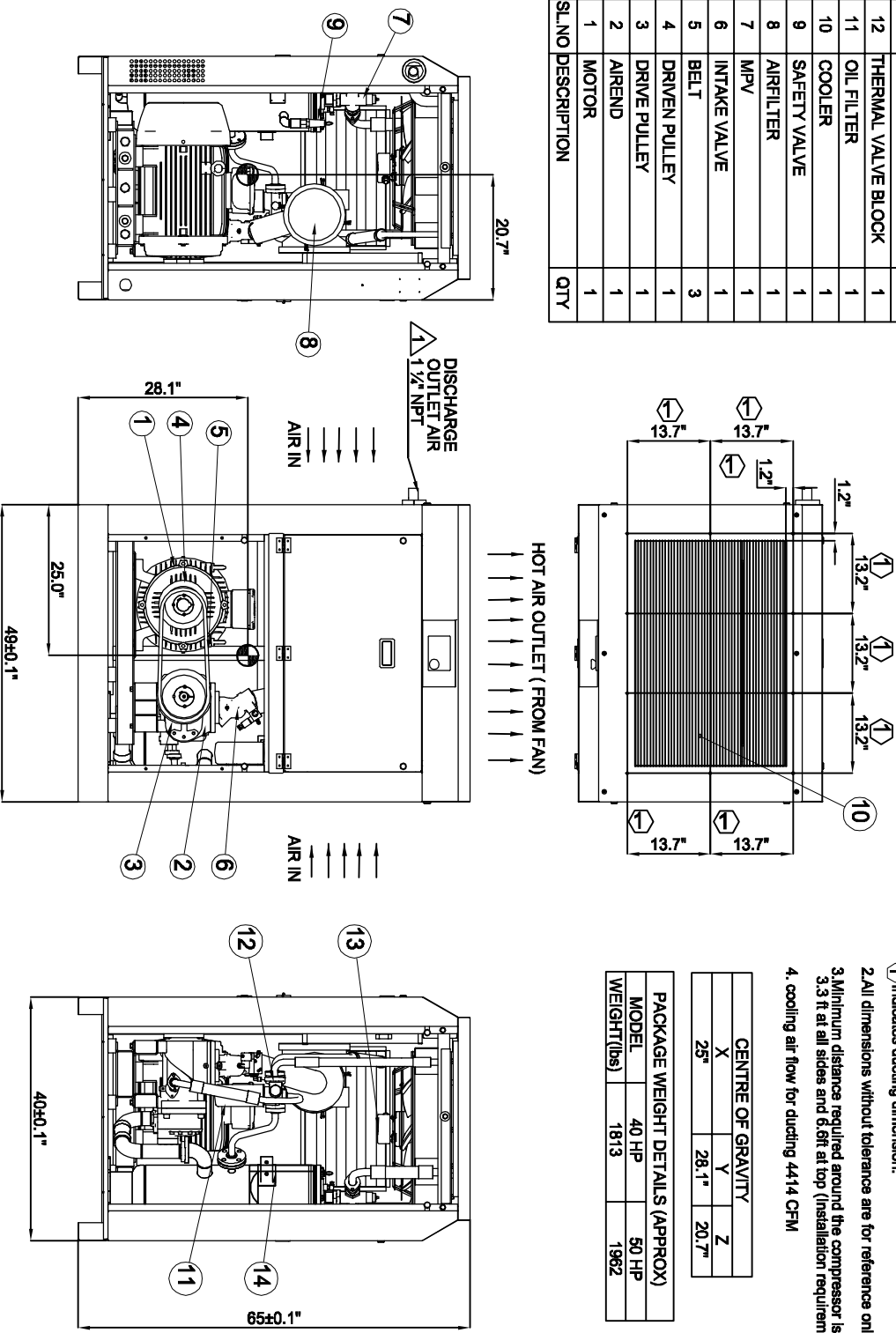
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**MACHINING DEVIATION FOR OPEN DIMNS.IS 2102(Medium)**

DIMN.	OVER	-	6	30	120	315	1000	2000	>4000
	UP TO & INCL.	6	30	120	315	1000	2000	4000	
TOLERANCE		±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3

ROUGHNESS SYMBOL												
ROUGHNESS VALUE $R_a$ $\mu m$	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12
	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50

14	SEPERATOR ELEMENT	1
13	FAN	1
12	THERMAL VALVE BLOCK	1
11	OIL FILTER	1
10	COOLER	1
9	SAFETY VALVE	1
8	AIRFILTER	1
7	MPV	1
6	INTAKE VALVE	1
5	BELT	3
4	DRIVEN PULLEY	1
3	DRIVE PULLEY	1
2	AIREND	1
1	MOTOR	1
S/LNO	DESCRIPTION	QTY

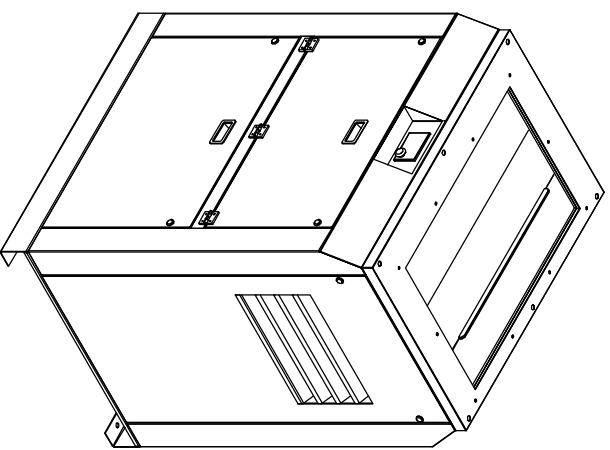


**NOTE:**  
① Indicates ducting dimension.

2. All dimensions without tolerance are for reference only.
3. Minimum distance required around the compressor is 3.3 ft at all sides and 6.6 ft at top (installation requirement).
4. cooling air flow for ducting 4414 CFM


CENTRE OF GRAVITY		
X	Y	Z
25"	28.1"	20.7"

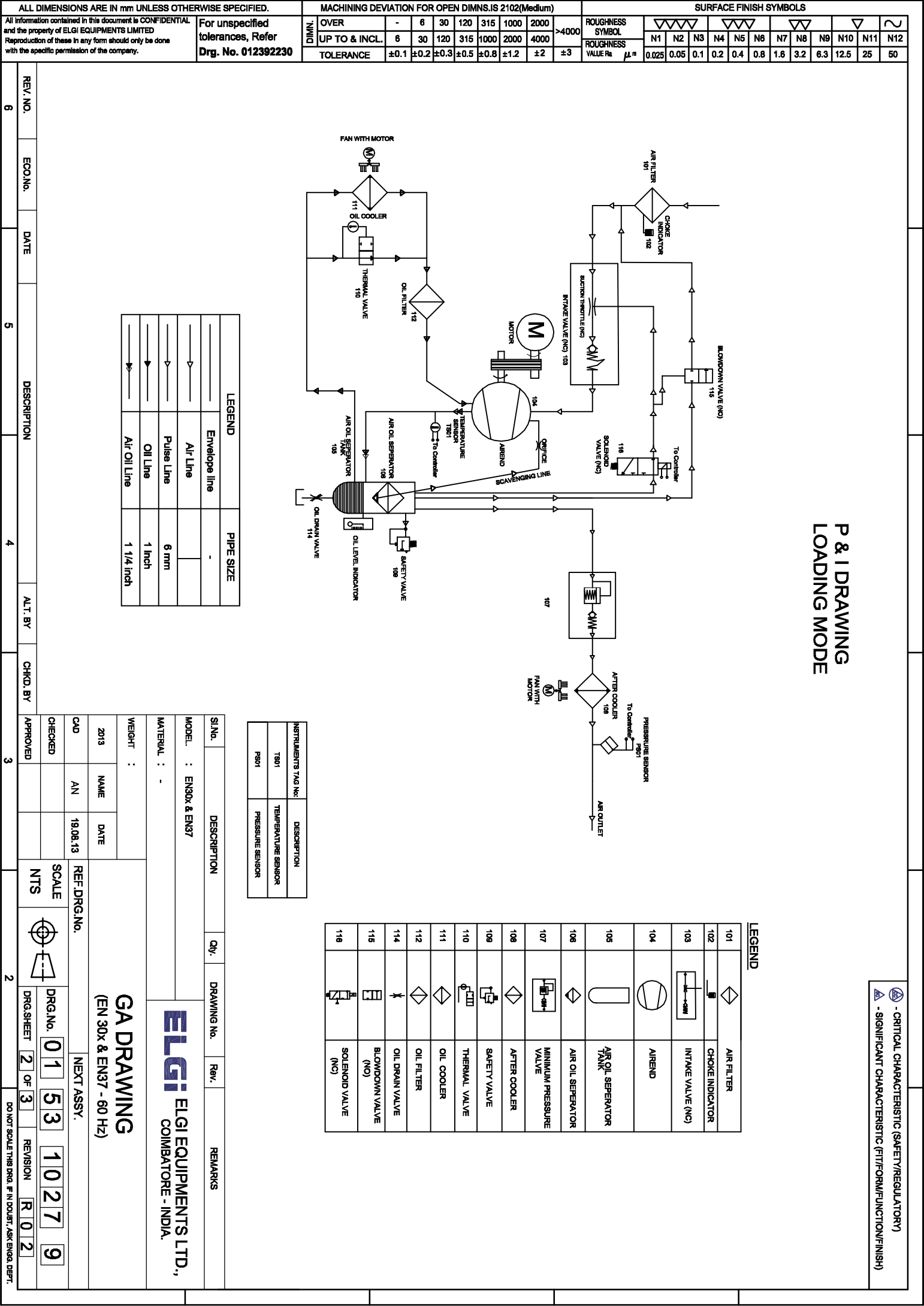
PACKAGE WEIGHT DETAILS (APPROX)		
MODEL	40 HP	50 HP
WEIGHT(lbs)	1813	1962



- CRITICAL CHARACTERISTIC (SAFETY/REGULATORY)
- SIGNIFICANT CHARACTERISTIC (FIT/FORM/FUNCTION/FINISH)

REV. NO.	ECO.No.	DATE	DESCRIPTION	ALT. BY	CHKD. BY
6			5	4	

Sl.No.	DESCRIPTION		Qty.	DRAWING No.	Rev.	REMARKS		
MODEL.	: EN 30x & EN37			<div>ELGI</div> ELGI EQUIPMENTS LTD., COIMBATORE - INDIA.				
MATERIAL :	-							
WEIGHT :	<div>GA DRAWING</div> <div>(EN30x &amp; EN37 - 60 Hz)</div> <div>NEXT ASSY.</div>							
2013							NAME	DATE
CAD							AN	19.08.13
CHECKED								
APPROVED			SCALE	<div></div>				
			NTS					
			DRG.No.	01	53	1027	9	
			DRG.SHEET	1	OF 3	REVISION	R 02	
3			2					
DO NOT SCALE THIS DRG. IF IN DOUBT, ASK ENGR. DEPT.								



ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.			MACHINING DEVIATION FOR OPEN DIMS.IS 2102(Medium)										SURFACE FINISH SYMBOLS														
All information contained in this document is CONFIDENTIAL and the property of ELGI EQUIPMENTS LIMITED Reproduction of these in any form should only be done with the specific permission of the company.			For unspecified tolerances, Refer Drg. No. 012392230			OVER	-	6	30	120	315	1000	2000	>4000	ROUGHNESS SYMBOL	▽▽▽			▽▽			▽			~		
						UP TO & INCL.	6	30	120	315	1000	2000	4000	ROUGHNESS VALUE Ra	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	
						TOLERANCE	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50	

REV. NO.

ECO.No.

DATE

DESCRIPTION

ALT. BY

CHKD. BY

APPROVED

6

5

4

3

2

LEGEND

Envelope line

Air Line

Pulse Line

Oil Line

Air Oil Line

PIPE SIZE

-

6 mm

1 inch

1 1/4 inch

GA DRAWING

(EN 30x & EN37 - 60 Hz)

ELGI ELGI EQUIPMENTS LTD.,

COIMBATORE - INDIA.

MODEL : EN30x & EN37

MATERIAL : -

WEIGHT :

CAD NAME DATE AN 19.08.13

CHECKED

APPROVED

SCALE NTS

DRG.No. 01 53 10 27 9

DRG.SHEET 2 OF 3 REVISION R 0 2

REF.DRG.No.

NEXT ASSY.

INSTRUMENTS TAG No:

1801 TEMPERATURE SENSOR

P801 PRESSURE SENSOR

101 AIR FILTER

102 CHOKE INDICATOR

103 INTAKE VALVE (NC)

104 AIREND

105 AIR OIL SEPARATOR TANK

106 AIR OIL SEPARATOR

107 MINIMUM PRESSURE VALVE

108 AFTER COOLER

109 SAFETY VALVE

110 THERMAL VALVE

111 OIL COOLER

112 OIL FILTER

114 OIL DRAIN VALVE

115 BLOWDOWN VALVE (NO)

116 SOLENOID VALVE (NC)

P & I DRAWING






LOADING MODE

[illegible][illegible][illegible][illegible]

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### MACHINING DEVIATION FOR OPEN DIMNS.IS 2102(Medium)

DIMM.	OVER	-	6	30	120	315	1000	2000	>4000
	UP TO & INCL.	6	30	120	315	1000	2000	4000	
TOLERANCE		±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3

ROUGHNESS SYMBOL												
	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12
ROUGHNESS VALUE $R_{it}$	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50

Technical drawing of a compressor base showing dimensions and components. The drawing includes the following dimensions and labels:

- Overall width:  $= 49.2'' =$
- Inner width (excluding side rails):  $= 40.4'' =$
- Inner width (excluding side rails and end flanges):  $= 37.2'' =$
- Overall height:  $= 57.1'' =$
- Height of the main body:  $= 49.2'' =$
- Height of the base plate:  $= 43.3'' =$
- Labels:
  - $\varnothing 7$  - 4places
  - concrete platform
  - compressor base
  - con

Sl.No.	DESCRIPTION	Qty.	DRAWING No.	Rev.	REMARKS
MODEL :	EN30x & EN37		<div>ELGI</div> <div>ELGI EQUIPMENTS LTD.,</div> <div>COIMBATORE - INDIA.</div>		
MATERIAL :	-				
WEIGHT :					
2013	NAME	DATE	<div>GA DRAWING</div> <div>(EN 30x &amp; EN37 - 60 HZ)</div> <div>NEXT ASSY.</div>		
CAD	AN	19.08.13			
CHECKED					
APPROVED					
SCALE		REF.DRG.No.			
NTS					
DRG.No.		01	53	1027	9
DRG.SHEET		3	OF 3	REVISION	R 0 2

The dimension 'H' shall be determined by the Customer according to the ground condition.

**SECTION 'AA'**

**(OPTIONAL)**

## 4.0 Technical data

### Standard

Model	-	EN 30X				EN 37			
Working pressure	psi.g	100	125	150	175	100	125	150	175
FAD - Free air delivery	cfm	199	170	152	134	249	207	191	171
	m³/min	5.63	4.81	4.30	3.79	7.05	5.86	5.41	4.84
Unloading pressure	psi.g	104	129	154	179	104	129	154	179
Nominal power supply conditions	-	208-230 / 460 (+/-10%), 60Hz (+/-5%), 3 phase							
Main motor rating	hp	40				50			
Type of motors (main drive & fan drive)	-	Squirrel cage induction-TEFC							
Insulation and protection of main motor	-	Class F/IP55							
Frame size / mounting type	-	324TS/B3				326TS/B3			
Type of starter for main motor	-	Star delta starter				Star delta starter			
Maximum fan motor rating per fan X no. of fans	hp	1.8x 1				1.8 x 1			
Rated speed of fan motor	rpm	1320				1320			
Safety valve set pressure	psi.g	205							

<b>Contents</b>	<b>Page No.</b>
<b>5.1. Installation and commissioning</b>	<b>5.2</b>
5.1.1 Commissioning procedure	5.2
5.1.2 Unpacking	5.2
5.1.3 Handling the compressor	5.2
5.1.4 Site requirements	5.3
5.1.5 Ventilation and exhausting hot air	5.4
5.1.6 Electricals	5.4
5.1.7 Air pipe line	5.5
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### 5.1.1 Commissioning

Before you operate the new EN series compressor for the first time, install it at your site according to ELGi's Installation specifications.

For safe operation of the compressor, the servicing technician performs a series of checks on the compressor and the systems to which the compressor connects. The technician will explain to the compressor operator how to operate and maintain the equipment. This procedure is referred to as the commissioning process.

The commissioning of your compressor is a necessary safety step. The general operating conditions of the equipment, including the cleanliness of the ambient atmosphere, the temperature and ventilation, are checked. Technical details relating to your system, such as particulars of your electrical installation, are verified. The commissioning process includes familiarizing your compressor operator with all aspects of the compressor's normal running and dealing with unusual situations.

Please make preparations according to the instructions provided in the Installation section for your EN Series compressor to be commissioned. Ensure that the location chosen meets the requirements of accessibility, ventilation, and safety. Provide electrical power as recommended in the Installation section. Select air pipe lines and receivers for your system according to the tables provided in the same section.

After completing the commissioning process, the technician will fill in the commissioning report and the warranty card.

#### NOTE

Ensure belt tension as per the drive table during commissioning.

### 5.1.2 Unpacking

Unpack the compressor from the packing case by removing the nails or pins. Unscrew the bolts as you hold the compressor to the base of the crate.

Once you have separated the packing material, check the contents against the packing list. The compressor ships with the following items:

- The key to doors
- The operation and maintenance manual
- A checklist of parts of the machine
- An electrical drawing

Tools may be provided on request. If any components are missing, contact ELGi immediately.

### 5.1.3 Handling

- If the compressor consists of a lifting bail, then use only the bail to lift the bail machine. If no bails exist, lift the

bail machine using slings. Always use slings and not the lifting bail to airlift compressors by helicopter.

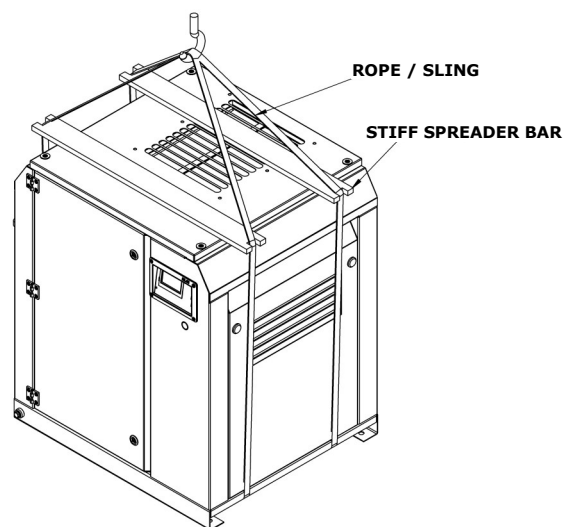


Figure 2. Lifting using crane

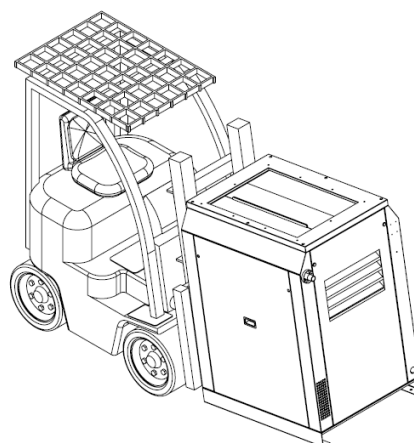


Figure 2.1 Lifting using Fork

- Prior to lifting, inspect the lifting bails and points of attachment for cracked welds; for cracked, bent, corroded or otherwise degraded members; and for loose bolts and nuts.
- Make sure the entire lifting, rigging, and supporting structure has been inspected, is in good condition, and has a rated capacity of at least the net weight of the

#### NOTE

##### Removal of transit brackets:

Once the compressor settles down in its final position, remove the red painted transit bushes and store for future use.

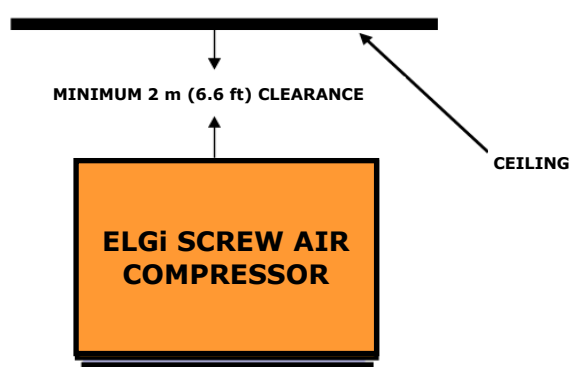
##### Locations:

- Bushes in between the base and structure

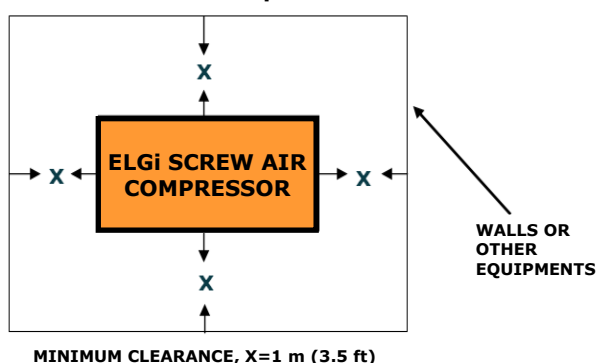


compressor. If you are unsure of the weight, then weigh the compressor before lifting it.

- Make sure the lifting hook has a functional safety latch, or equivalent, and is fully engaged and latched on the bail.
- Use guide ropes or equivalent to prevent twisting or swinging of the machine once it has been lifted clear off the ground.
- Do not attempt to lift the compressor in high winds.
- Keep all personnel away from the compressor when it is suspended.



**Figure 3. Vertical clearance around the compressor**



**Figure 4. Horizontal clearance around the compressor**

- Do not lift the compressor higher than necessary.
- Make sure the lift operator is present throughout the duration that the compressor is suspended.
- Set the compressor down only on a level surface that is capable of supporting at least its net weight plus an additional 10 per cent allowance .

#### 5.1.4 Site requirements

- Install the air compressor in a clean, dry, cool, and dust free room as extreme temperatures (hot or cold), moisture, and airborne contaminants can significantly affect compressor performance, durability, and compressed air quality.

- Be aware the entrance to the compressor room should be high enough and wide enough to carry the compressor in and out.
- Leave a minimum of 1m (3.28ft) space around the compressor for safe and proper inspection, cleaning, and maintenance activities.
- Leave a minimum of 2m (6.56ft) space above the compressor for hot air to flow away from the compressor.
- Ensure the compressor is protected against direct sunlight and rain.
- Avoid exposing the compressor to excessive moisture (from rain, dryer vent, etc.) as moisture can affect airend lubrication, promote rust formation on the compressor, and lead to electrical problems of the motor.
- Neither install the machine in a location where flame is used nor place any inflammable objects near the compressor.
- Ensure the room temperature is within 45°C (113°F), as high ambient temperatures will result in reduced oil life due to higher discharge oil temperature (DOT). It also results in high approach temperatures affecting the cooling and condensation efficiency in the after-cooler and in air treatment equipment like air dryers.
- Ensure the hot medium of other utility equipment like gensets/dryers/ boilers, etc., is not sucked by the compressor inlet or that in any way the room temperature does not rise to prevent high discharge oil temperature.
- Ensure the ambient temperature does not drop below 0°C (32°F). Provide air supply openings and adjustable louvers to ensure that the minimum temperature does not drop down below 0°C (32°F).
- Install the compressor on a smooth, solid, level industrial concrete floor capable of bearing the weight of the compressor. Ensure unevenness of the surface is within 6mm (0.25") and taper is within 50 per meter.
- If the floor is splashed frequently with water while cleaning, then place your compressor on a raised concrete plinth 100 to 150 mm (4 to 6 inches) high.
- Ensure the compressor base makes 100% contact directly with the floor.
- Know that an industrial floor with a level surface capable of supporting the weight of the compressor is sufficient for installing your compressor. No special foundation or anchoring is necessary for rotary screw compressors.
- Do not store toxic, volatile, or corrosive agents near the compressor.
- Isolate the compressor from corrosive agents like ammonia, chlorine, salt spray, and other chemicals as

these may erode the internal components and also contaminate the oil and filters.

- Do not allow hot air from additional equipment to blow towards the compressor.
- If you operate in high dust applications like rice mills, cement, flour mills, etc., clean and replace the filters more often.
- Good practice is to have overhead lifting in the compressor room to facilitate any major overhaul. If an overhead hoist is not available, you should be able to use a mobile crane or forklift truck in your compressor room at a minimum.

### 5.1.5 Ventilation and exhausting hot air

- Ensure adequate ventilation in the compressor installation area. Your compressor has a ventilating air requirement of 600 to 1200 cfm.

#### Guidelines to compressor ventilation setup:

Follow these guidelines when providing ventilation for the compressor:

- Provide openings close to the floor level on walls/partitions close to the air suction side of the compressor
- Provide exhaust openings close to the ceiling for hot air exit.
- Ensure the air velocity in the supply and exhaust ducts does not exceed 13.1ft/s (4m/s).
- Determine air velocity during commissioning using an anemometer.
- Do not connect cool air inlet ducts directly to the compressor inlet side.
- To eliminate transmission of vibrations, provide a soft bellows connector between the duct and the compressor.
- Contact ELGi in case you need to provide a duct connection or filter fitment on the compressor.
- Do not direct forced flow of cool air towards the compressor.
- Locate the compressor such that hot air from other machines is not directed towards it.

#### NOTE

*Suspended particulate matter should be less than 150 spm to achieve the specified consumable life.*

*Guarantee is void if the compressor is operated above its intended pressure.*

#### WARNING

*Ensure that only authorized electricians perform electrical work. Study the electrical circuit diagram before starting work.*

### 5.1.6 Electricals

#### Electricals 60Hz

##### NOTE

*Supply power to the compressor through a fuse switch unit of a suitable rating mounted on the compressor at a height of 5mm.*

Power supply	208-230 V 3Ph		460 V 3Ph	
Motor Power kW/hp	30/40	37/50	30/40	37/50
Nominal current (A)	105	135	50	65
Cable material	Copper conductor only			
Power supply cable (AWG) (L=30ft)	3*1/50	3*(2/0)/70	3*6/16	3*4/25
Upstream fuses (A) (Type RK/CC/J)	160	200	80	100

You must provide a lockable main switch unit with pre-connected slow-blow main fuses as per industrial safety regulations. Power supply should be 208/230V 1 Ph 60Hz with earth PE or 208-230V/460V 3 Ph 60Hz with earth PE.

The fuse and cable specifications for 208-230V, 60 Hz 1 Ph, 208-230V 60Hz 3ph and 460V 60Hz 3ph power supplies appear in the table below.

You must also provide a switching fuse unit with pre-connected slow-blow main fuses as per industrial safety regulations. Power supply should be 208/30V 1 Ph with earth PE or 208-230V/460V 3 Ph with earth PE.

The fuse and cable specifications for 208-230V, 60 Hz 3 Ph and 460V 60Hz 3ph power supplies appear in the table below.

#### Electricals 50Hz

Model	Recommended pre-connected fuse rating (A)	Incoming copper cable size (mm <sup>2</sup> )	Incoming aluminium cable size (mm <sup>2</sup> )
30 kW	100	25 Sq.mm	35 Sq.mm
37 kW	125	35 Sq.mm	55 Sq.mm
4 5kW	150	50 Sq.mm	70 Sq.mm

You must provide a switching fuse unit with pre-connected slow-blow main fuses as per industrial safety regulations. The power supply should be 380V/400V/415V, 50Hz, 3 phase with (PE) earthing.

The fuse and cable specifications for 380V/400V/415V, 50Hz, 3 Ph power supplies appear in the table below.

You must provide a switching fuse unit with pre-connected slow-blow main fuses as per industrial safety regulations. The power supply should be 380V/400V/415V, 3 phase with Neutral.

The fuse and cable specifications for 380V/400V or 415V, 50Hz, 3 Ph power supplies appear in the table below .

## Earthing

Verify the total power supply requirements provided on the compressor nameplate before connecting the compressor to electrical lines. Connect the earthing line to the point provided in the control panel box of the compressor.

Check the direction of rotation as per the arrow indication, to check-start the compressor. Stop it immediately after the check-start by pressing the emergency stop button.

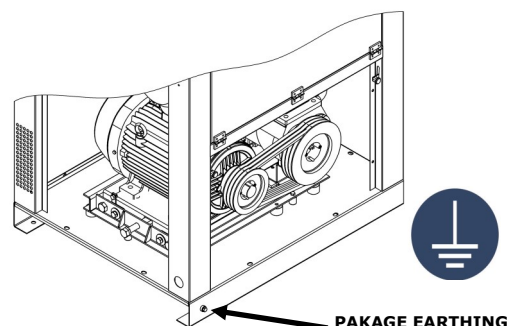
Switch on the compressor after ensuring all the above points and let it run at the rated speed.

In case of problems during the compressor operation, check the warning fault code that appears in the controller of the compressor. Refer to the Functional Description and Operation sections of this manual to know more about the fault.

If you hear any abnormal noise when operating the

compressor, switch it off immediately and contact the ELGi service engineer.

Follow all above points when you need to reinstall the compressor at a different location. If the compressor had been in storage for an extended period before commissioning, contact the ELGi service engineer.



**Figure 5. Earthing line of compressor**

### 5.1.7 Air pipe dimensions

Volume Flow FAD		NPS Pipe size/ Inside diameter (mm)									
		1/2		3/4		1		1 1/4		1 1/2	
		15.80		20.93		26.65		35.05		40.89	
(m <sup>3</sup> /min)	(cfm)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)
0.1	4	0.02	0.22								
0.2	7	0.06	0.80	0.01	0.20						
0.3	11	0.12	1.69	0.03	0.41	0.01	0.12				
0.4	14	0.20	2.88	0.05	0.71	0.01	0.21				
0.5	18	0.30	4.35	0.07	1.07	0.01	0.32	0.01	0.08		
0.6	21	0.43	6.09	0.10	1.49	0.03	0.45	0.01	0.11		
0.7	25	0.57	8.10	0.14	1.99	0.04	0.59	0.01	0.15		
0.8	28	0.73	10.38	0.18	2.54	0.05	0.76	0.01	0.19	0.01	0.09
0.9	32	0.90	12.90	0.22	3.16	0.07	0.95	0.02	0.24	0.01	0.11
1	35	1.10	15.68	0.27	3.84	0.08	1.15	0.02	0.29	0.01	0.13
1.2	42			0.38	5.38	0.11	1.61	0.03	0.41	0.01	0.19
1.4	49			0.50	7.16	0.15	2.14	0.04	0.54	0.02	0.25
1.6	56			0.64	9.16	0.19	2.74	0.05	0.70	0.02	0.32
1.8	64			0.80	11.40	0.24	3.41	0.06	0.87	0.03	0.40
2	71			0.97	13.85	0.29	4.14	0.07	1.05	0.03	0.49
2.2	78			1.16	16.52	0.35	4.94	0.09	1.25	0.04	0.58
2.4	85			1.36	19.40	0.41	5.80	0.10	1.47	0.05	0.68
2.6	92					0.47	6.73	0.12	1.71	0.06	0.79
2.8	99					0.54	7.72	0.14	1.96	0.06	0.91
3	106					0.61	8.77	0.16	2.23	0.07	1.03
3.5	124					0.82	11.66	0.21	2.96	0.10	1.37
4	141					1.05	14.93	0.27	3.79	0.12	1.75
4.5	159					1.30	18.57	0.33	4.71	0.15	2.18
5	177							0.40	5.73	0.19	2.65
5.5	194							0.48	6.83	0.22	3.16
6	212							0.56	8.02	0.26	3.71
6.5	229							0.65	9.30	0.30	4.30
7	247							0.75	10.67	0.35	4.94
7.5	265							0.85	12.12	0.39	5.61
8	282							0.96	13.66	0.44	6.32
8.5	300							1.07	15.28	0.50	7.07
9	318							1.19	16.99	0.55	7.86
9.5	335							1.32	18.477	0.61	8.69
10	353							1.45	20.64	0.67	9.55
15	530									1.42	20.22

Volume Flow FAD		NPS Pipe size/ Inside diameter (mm)									
		1 1/2		2		2 1/2		3		4	
		40.89		52.50		62.71		77.93		102.26	
(m <sup>3</sup> /min)	(cfm)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)	(bar)	(psi)
0.8	28	0.01	0.09								
0.9	32	0.01	0.11								
1	35	0.01	0.13								
1.2	42	0.01	0.19								
1.4	49	0.02	0.25	0.01	0.07						
1.6	56	0.02	0.32	0.01	0.09						
1.8	64	0.03	0.40	0.01	0.11						
2	71	0.03	0.49	0.01	0.14						
2.2	78	0.04	0.58	0.01	0.17						
2.4	85	0.05	0.68	0.01	0.20	0.01	0.08				
2.6	92	0.06	0.79	0.02	0.23	0.01	0.09				
2.8	99	0.06	0.91	0.02	0.26	0.01	0.11				
3	106	0.07	1.03	0.02	0.30	0.01	0.12				
3.5	124	0.10	1.37	0.03	0.39	0.01	0.16				
4	141	0.12	1.75	0.04	0.50	0.01	0.21				
4.5	159	0.15	2.18	0.04	0.63	0.02	0.26	0.01	0.09		
5	177	0.19	2.65	0.05	0.76	0.02	0.31	0.01	0.11		
5.5	194	0.22	3.16	0.06	0.91	0.03	0.37	0.01	0.13		
6	212	0.26	3.71	0.07	1.06	0.03	0.44	0.01	0.15		
6.5	229	0.30	4.30	0.09	1.23	0.04	0.51	0.01	0.17		
7	247	0.35	4.94	0.10	1.42	0.04	0.58	0.01	0.20		
7.5	265	0.39	5.61	0.11	1.61	0.05	0.66	0.02	0.22		
8	282	0.44	6.32	0.13	1.81	0.05	0.75	0.02	0.25		
8.5	300	0.50	7.07	0.14	2.03	0.06	0.83	0.02	0.28	0.01	0.07
9	318	0.55	7.86	0.16	2.25	0.06	0.93	0.02	0.31	0.01	0.08
9.5	335	0.61	8.69	0.17	2.49	0.07	1.02	0.02	0.35	0.01	0.09
10	353	0.67	9.55	0.19	2.74	0.08	1.13	0.03	0.38	0.01	0.10
15	530	1.42	20.22	0.41	5.80	0.17	2.38	0.06	0.80	0.01	0.21
20	706			0.69	9.87	0.28	4.06	0.10	1.37	0.02	0.35
25	883			1.05	14.92	0.43	6.13	0.15	2.07	0.04	0.53
30	1059			1.46	20.90	0.60	8.59	0.20	2.90	0.05	0.75
35	1236					0.80	11.43	0.27	3.86	0.07	0.99
40	1412					1.03	14.63	0.35	4.94	0.09	1.27
45	1589					1.28	18.20	0.43	6.14	0.11	1.58
50	1765							0.52	7.46	0.13	1.92
55	1942							0.62	8.90	0.16	2.29
60	2118							0.73	10.46	0.19	2.69
65	2295							0.85	12.13	0.22	3.12
70	2471							0.97	13.91	0.25	3.57
75	2648							1.11	15.80	0.28	4.06
80	2824							1.25	17.81	0.32	4.58
85	3001							1.40	19.92	0.36	5.12
90	3177									0.40	5.69
95	3354									0.44	6.29
100	3530									0.48	6.92
150	5295									1.03	14.64

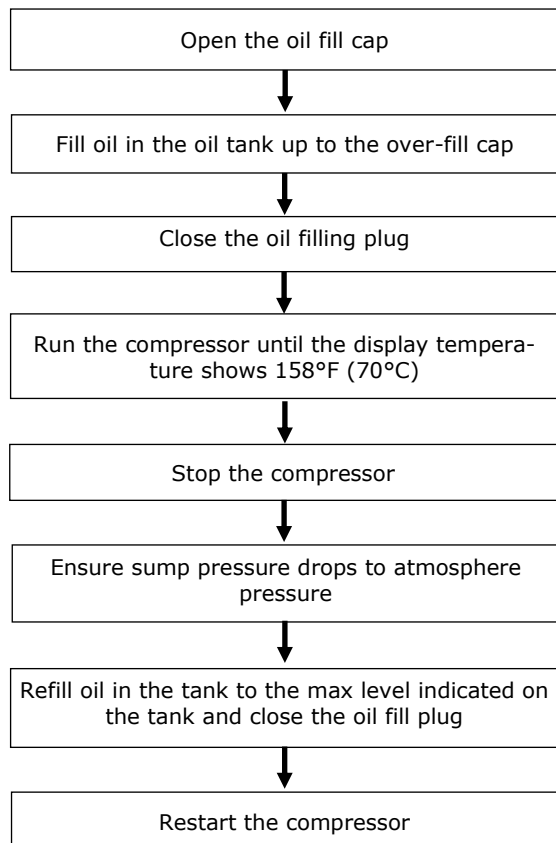
**Table 1. Global series – Air pipeline dimensions**

#### NOTE

The above table shows the pressure drops in 100m length schedule 40 steel pipe at 7 bar (abs)

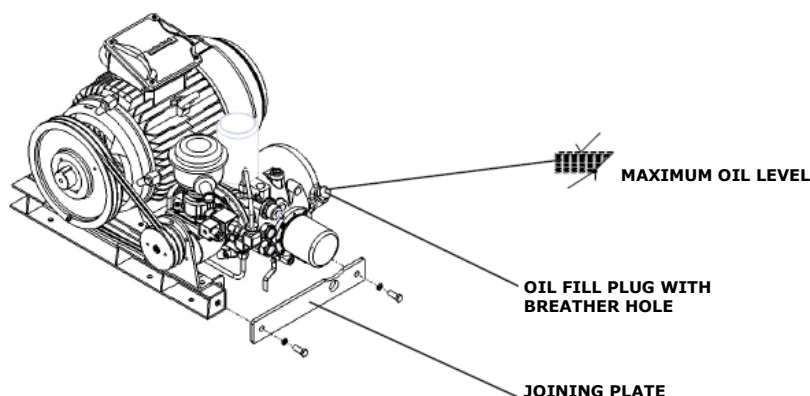
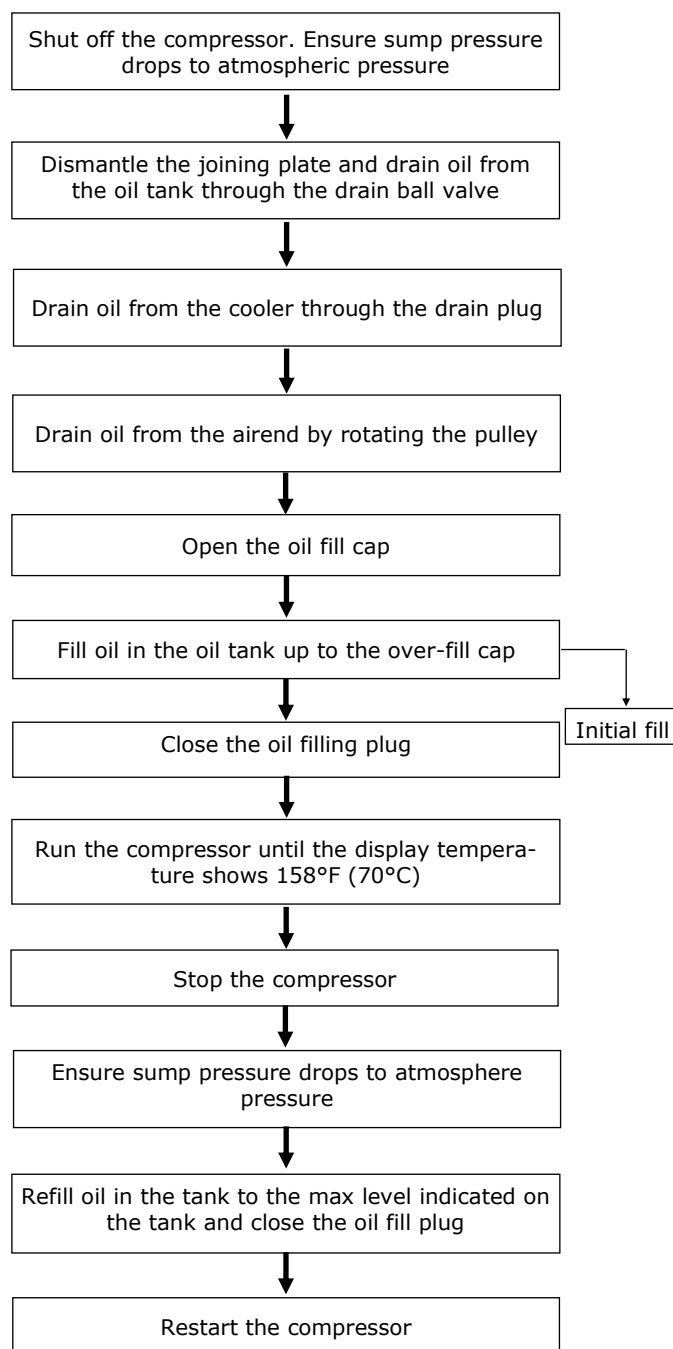
### 5.1.8 Oil fill procedure

### Procedure for filling oil in a newly assembled machine



Sl. No.	Model	Volume of oil required	Initial fill	Second fill, after cranking
		Litres	Litres	Litres
1	EN30 to EN45	19(5)	14(3.7)	6(1.3)

### 5.1.9 Procedure for changing oil in the compressor during service



### 5.1.10 Direction of rotation

Check the direction of rotation of the main motor when starting the compressor for the first time. You do this by switching on the compressor and switching it off within 5 sec. Press the green start button to power on and the red mushroom stop button to power down the compressor. The motor must rotate in the clockwise direction when viewed from the main motor cooling fan side. If the direction of rotation is not correct, isolate the machine from the electrical lines and interchange any two phases. Restart the compressor and ensure that the direction of rotation of the main motor is counterclockwise and the fan motor is clockwise.

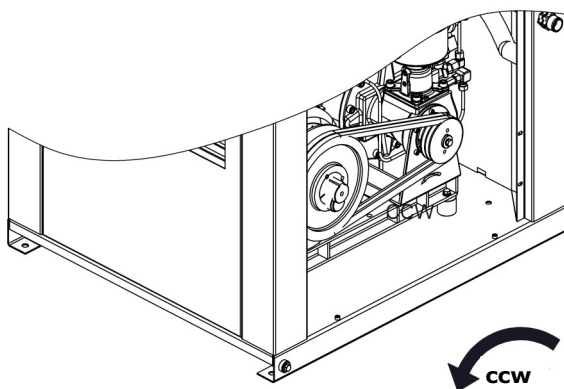
Switch on the compressor after ensuring all the above points and let it run at the rated speed.

In case of problems during the compressor operation, note the fault message in the controller display of the compressor. Refer to the Functional Description and Operation sections of this manual to know more about the fault.

If you hear any abnormal noise when you run the compressor, switch it off immediately and contact the ELGi service engineer.

Follow all above points when you reinstall the compressor at a different location.

If the compressor had been in storage for an extended period before commissioning, contact the ELGi service engineer.



If you do not intend to use the compressor for a prolonged period, take special measures to ensure the protection of the following components:

1. The airend
2. The motor
3. The air oil sump or receiver tank

### 5.2.1 Airend

- Drain the oil from the air oil separator tank.
- Rotate the airend drive pulley by hand as you remove it.
- Block the connection port completely.
- Remove the intake filter and intake valve. Pour rust preventive oil (Castrol DWX 32 or an equivalent grade/brand) into the airend through the rotor intake area.
- Rotate the drive pulley by hand so that rust preventive oil spreads all over the bearings, seals, and other parts of the airend.
- Drain the rust-preventive oil by opening the drain plug fully.
- Refit the piping and belt.
- Ensure that all the openings are plugged to avoid dust entry.
- This procedure protects the airend for up to six months when the compressor is stored long. It must be repeated every six months during prolonged storage.

### 5.2.2 Motor

- Check the insulation of the motor winding.
- Remove any moisture in the motor.
- Check junction box terminals for tightness of wires.
- Apply grease on motor bearings.
- To prepare the motor for 1-year storage .

#### Other consumables

- Oil filter element
- Air filter element
- Separator element

### 5.2.3 Air-oil separator tank

- Drain the oil from the air-oil separator tank.
- Remove the entire tank from the compressor after disconnecting it from all hoses, the minimum pressure valve outlet line, control pulse lines, and control switches.
- Clean the tank using DWX 32 oil.
- The separator tank may now be stored for up to two years. Replace the separator element before using the compressor again.

### 5.2.4 Disposal of packing

The wood used in the shipping crates of the Encap series compressor is biodegradable.

The polyethylene covers wrapped around the compressor and the polystyrene packing provided around the electrical panels are not recyclable. These must be disposed of in accordance with prevailing environmental laws.

### 5.3.1 Safety system and interlocking device

#### 5.3.1.1 Discharge temperature sensor

This sensor enables the dryer to shut down the compressor if the discharge oil temperature mixture reaches a preset value of 230°F (110°C) ± 41°F (5°C). It resides on the airend outlet cover or the receiver tank.

#### 5.3.1.2 Minimum pressure valve

This valve resides at the outlet of the oil separator and maintains a minimum receiver tank pressure of about 58 psi. It facilitates proper air and oil separation, and oil circulation to the airend.

#### 5.3.1.3 Pressure relief valve

The pressure relief valve relieves pressure in the oil receiver tank when working pressure exceeds 217psi g (15 bar).

#### 5.3.1.4 Overload relays for main motor and fan motor

These relays reside on the electrical control panel. They ensure that the compressor shuts off when power consumption exceeds a set value.

### 5.3.2 Operation control system

**Perform these tasks before starting the compressor:**

- Fill oil in the tank as per the oil filling procedure.
- Open all the doors and visually check the machine for suitable operation.
- Open the electrical panel at the front of the compressor and check whether the three phases with earth PE are connected securely.
- Check the necessary grounding line in the band/compressor base.
- Ensure that you commission the machine only in closed atmosphere air and on a level surface.
- Provide a clearance space of 3ft (1m) around the compressor.
- The machine should be commissioned on a levelled surface.
- Use only the recommended input cable size and fuse for the machine.
- Connect the correct cable size to the machine wings.
- For input power supply conditions, refer to 5.1.6.

### 5.3.3 Starting the equipment

Press the start button and check the direction of rotation of the end pulley.

### 5.3.4 Starting and normal operation mode

When you switch on the machine, the motor runs in DOL/star delta mode. Within a few seconds, the inlet valve opens and the compressor starts loading.

### 5.3.5 Unloading mode

After reaching the maximum cut-out pressure, the pressure sensor estimates the pressure and cuts off the solenoid electrical supply. At this stage, the blow down valve unloads the separator tank and the compressor starts to run in energy saving mode.

When the compressor runs continuously unloaded for 5 minutes in energy saving mode, it shifts to rest mode. Unless the demand for air increases, the machine does not restart. When air pressure falls, the compressor automatically starts loading.

### 5.3.6 Stopping

Press the STOP button (red) on the controller to stop the compressor.

### 5.3.7 Changing the compressor settings

Change the compressor settings using the tactile keypad and LCD panel on the controller. (Refer to the Neuron manual for details on the control panel and interpretation of the message.)



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### 6.1.1 Maintenance intervals

Frequency	Part	Remarks
Daily	Oil level	Check
	MOS condensate	Check
	Warning / alarms	Check
	Condensate in AOS tank	Check
Weekly	Pre filter ( air intake, cooler, control panel)	Clean
	Air filter element	Clean *
2000 hours or 6 months <sup>#</sup>	Oil & after coolers - air cooled (External)	Check & Clean
	Oil filter	Replace
	Oil	Sampling **
	Belt tensioning	Check & Re-tension
	50 Hz motor - 2 pole grease	Replace
4000 hours or every year *	Pre filter ( air intake, cooler, control panel)	Replace
	Air filter element	Replace
	Oil – Air lube XD / Air lube FG	Replace
	Air-oil separator element – Air lube XD / Air lube FG	Replace
	50 Hz motor ( 4 pole ) grease	Replace
	60 Hz motor ( > 25HP ) grease	Replace
	Return line sight glass / orifice / NRV	Check & Clean
	Return line strainer	Check & Clean
8000 hours or every 2 years *	Air-oil separator element - UT Synthetic	Replace
	Oil - UT Synthetic	Replace
	60 Hz motor ( ≤ 25HP ) grease	Replace
	Electrical connections	Check
	Pipe coupling element	Replace
	Intake valve kit	Replace
	Thermal Valve Kit	Check & Replace
	MPV kit	Replace
	BDV kit	Replace
	Solenoid valve	Replace
	Safety valve	Replace
	Nylon tubes	Replace
10000 hours	Belt	Replace

# - Whichever comes first

\* - As per air filter clog indicator

\*\* - For USA region only

**Table 2. Maintenance intervals**

#### NOTE

The above lifetime guidelines are applicable only to standard operating and regular maintenance conditions recommended in this manual. In the event of changes in the conditions, consult ELGi.

#### Precautions

##### A. If the compressor is kept idle

- Isolate the power supply.
- Close the main air outlet valve.
- Drain the water from the condensate system.
- Close the inlet and outlet water valve. (applicable only for water cooled compressors)

##### B. If the compressor is kept idle for more than 6 months

- Follow the above steps.
- Refer to the section "Preservation for long idle storage".

Volume	ELGi Air Lube UT Synthetic	ELGi Air Lube FG
5 litres (1.3 gallons)	000998092	000998077
20 litres (5.3 gallons)	000998090	000998078
208 litres (55 gallons)	000998093	000998079

**Table 3. Compressor oil**

### **⚠ WARNING**

Disconnect all the power at the source before attempt to perform maintenance or make adjustment.

### **⚠ WARNING**

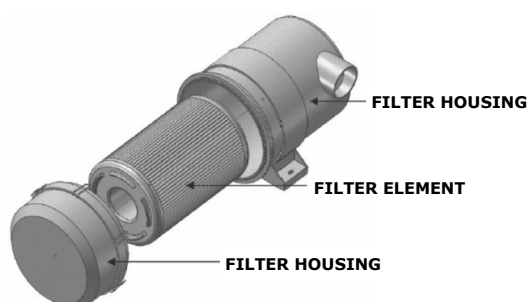
Do not remove caps, plugs, or other components when the compressor is running or pressurized. Stop the compressor and relieve all internal pressure before doing so.

## **6.1.2 Maintenance of individual components and systems**

Check all accessories independently to verify that they are functioning as required and replace their components as necessary. **After maintenance restart the compressor as mentioned in section "Operating instructions".**

### **6.1.2.1 Air filter**

If the air filter clog indicator shows a red colour (meaning the blocked condition) then the air filter needs to be cleaned or replaced (if the stipulated life has elapsed).



**Figure 12. Air filter**

#### **Pre work**

- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool for a few minutes.

#### **Requirements**

- Compressed air, new filter element (if needed).

#### **Maintenance**

- Unlock the mounting clips provided on the filter housing.
- Rotate and remove the filter element carefully.
- Clean the filter using moisture free compressed air at less than 2.5 bar.g (36.3 psi.g).
- Clean from the inside to outside.
- Remove the dust ejector from the filter housing cap and clean it carefully.

- Show bright light from inner side of the filter element to inspect for damage or holes that result in leaks. Light will emerge from the holes, indicating their locations. In case of damages replace the filter element
- Inspect all rubber sealing and their contact surfaces of the housing. Faulty rubber sealing must be replaced immediately.
- Return the dust ejector back in correct (bottom) position.
- Return the filter element back in position, assemble the filter housing cap such that the dust ejector settles in bottom position, and lock the assembly using the mounting clips.
- Inspect and tighten all air inlet connections prior to resuming operation (if necessary).
- Reset the air filter clog indicator.
- If a clean element is to be stored for later use, it must be stored in a clean container.

## **6.1.3 Air oil separator element**

#### **Pre work**

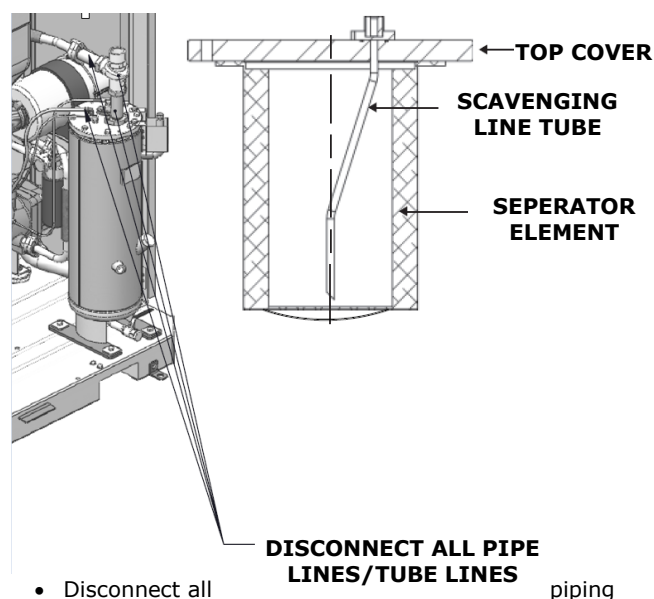
- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool for a few minutes.

#### **Requirements**

- Strap wrench, new separator element, clean cloth.

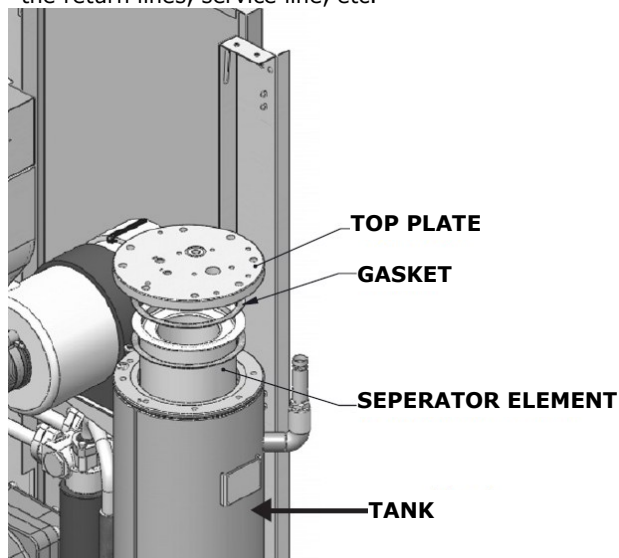
#### **Maintenance**

- Relieve oil pressure from the air oil tank and all fluid lines with the help of safety valve



connected to the air oil tank

- Disassemble the separator element by rotating it counter-clockwise cover to isolate the air oil tank from the return lines, service line, etc.



**Figure 13. Air oil separator**

- Remove the hex head bolt from the top plate.
- Swivel the top plate of the air oil tank.
- Remove the separator element.
- Scrap the old gasket material from cover and flange on the air oil tank. While doing so, take care not to let the scraps fall into the air oil tank
- Inspect and clean the air oil tank for rust and dirt.
- Stick the new gaskets on to the separator element one on either side.
- Replace the new separator element into the air oil tank, taking care not to dent it against the tank opening.
- Reposition the Top plate and assemble it by using fasteners. Torque: 120 N-m (88.5 lb-ft).
- Reconnect all piping.
- Clean the return oil strainer before restarting the machine..

#### **NOTE**

*The air-oil separator tank is tested according to standards. Regularly have inspections performed in conformity with local regulations.*

### **6.1.3.1 Oil top up & oil change over**

Proper compressor maintenance and operation is crucial for the lubricant to function properly and last till its estimated rated oil hours. The oil product shelf life is of minimum 3 years and maximum 5 years. Products should be kept properly sealed in the original container. Once the seal is broken, the above stated life span of the product is no longer applicable. Products should be stored in proper

storage warehouse that is away from direct sunlight and is not exposed to weather elements like rain, typhoon and snow storms. The products should also be stored away from any heat source, high humidity and moisture areas. If drums are stacked on ground level, they should all be stacked horizontally with the bung openings arranged at the 3 and 9 o'clock position.

ELGi recommends that once the seal is broken, all products be used immediately. ELGi does not encourage reuse or recycling of any leftover fluids due to contamination hazard. ELGi will not warrant the quality of the product once the original seal is broken. Also ensure that the oils are not mixed up between brands and types.

Please refer Material Safety Data Sheet (MSDS) for oil spill handling and disposal procedures.

#### **Pre work**

- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool for a few minutes.

#### **Requirements**

- New oil, flushing fluid (if needed)

#### **Maintenance**

##### **NOTE**

- *The compressor is originally filled with a particular oil, if you want to change over to other types of oil, perform steps 1, 2 and 3.*
- *But if you want to change the oil but continue with the same kind (same brand & type) perform steps 1 and 3 only.*
- *Ensure that you drain at least 90% of oil capacity of the compressor; if not the residual oil can contaminate new oil.*
- *Ensure no oil spills on anti-vibration mount during maintenance.*

#### **Step 1: Draining**

- Remove drain plug from the bottom of the separator tank and drain out all oil. Drain oil while the compressor is warm.
- Remove the pipe and drain plug from bottom of oil cooler. Then completely drain.
- Disconnect all oil pipe work which could trap oil and drain completely.
- Drain oil from the airend discharge pipe after dismantling it.
- Drain oil from the airend by hand rotation.

#### **Step 2: Flushing (Only for oil change over)**

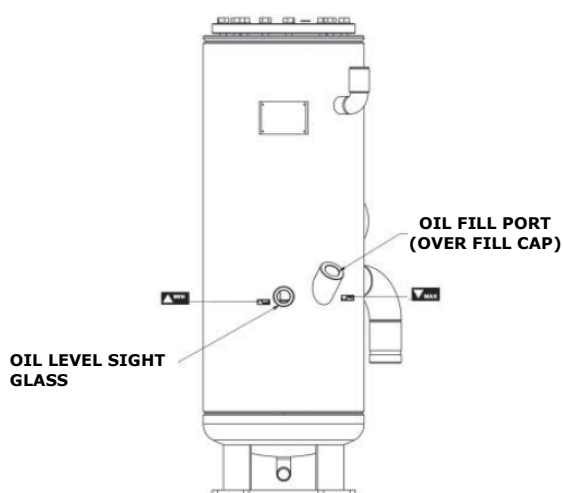
Check the air-oil separator differential pressure. To flush clean/non-varnished machines, using:

### Mineral/PAO/PAG oils

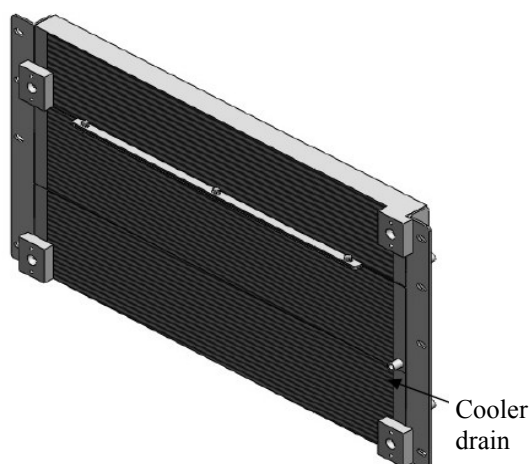
- Fill the compressor with the ELGi cleaner (use the same compressor oil fill volume) and run the compressor.
- After 500 hours of running, drain the cleaner as per step 1.
- Refill the compressor with new compressor oil.
- Send a sample\*\* of the compressor oil to ELGi for oil analysis after 300 hours.

### Step 3: Filling the oil

- Add fresh oil; fill it up to the oil fill plug. (initial fill)
- Close the oil fill plug.
- Pour oil into airend, then restart the compressor.
- Allow it to run for about 10 minutes.
- Stop the compressor.



**Figure 14. Air oil separator tank– oil drain**



**Figure 15. Cooler – oil drain**

### 6.1.4 Oil filter (spin on type)

The oil filter is fitted between the oil cooler and the airend unit. The components of the oil filter assembly are shown in the figure. This is a full flow filter with a pleated element. To service this filter, order the consumables kit (available with ELGi service personnel) The procedure for complete servicing of this filter is as follows.

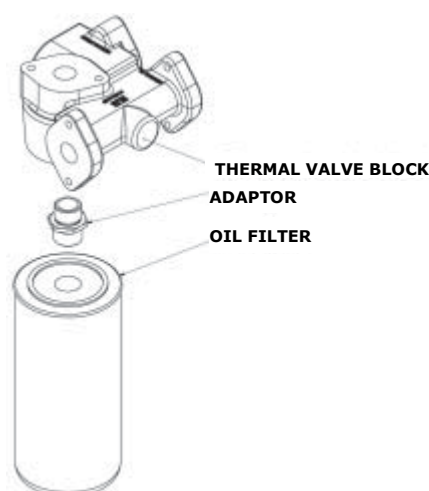
#### Pre work

- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool for a few minutes.

#### Requirements

- Strap wrench, new oil filter, O-ring, and clean cloth.

#### Maintenance



**Figure 16. Oil filter**

#### Dismantling method of oil filter:

- Hold the filter shell and rotate it counter - clockwise by strap wrench

#### Assembly of new oil filter:

- Ensure the O-ring of the filter is damaged free.
- Clean the seating surface with clean cloth
- Apply a thin film of oil on the mating surface of the O-ring.
- Return the filter to its original position and rotate it clockwise manually. After tightening, rotate it further by hand for one and a half times
- Ensure no oil leaks from the mating surface.

#### NOTE

*Suspended particulate matter should be less than 150spm to achieve the specified consumable life. Guarantee becomes void if the compressor is operated above its intended pressure.*

### 6.1.5 Intake valve

#### **WARNING**

*Valves should not be opened when pressure is applied.*

#### **NOTE**

*The maintenance of following parts (valves) demands highly skilled authorized personnel. So, it is recommended that an ELGi service engineer does the maintenance.*

#### **Pre work:**

- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool for a 10-minutes.

#### **Requirements :**

- Soft cloth, grease, liquid cleaner, Allen keys, screw driver, spanner, pressure gauge, service kit (if needed).

#### **Procedure :**

##### **Disassembly :**

- Remove the hoses connected to the intake valve (Suction hose filter to intake valve pulse line, BDV line)
- Remove the intake valve
- Block the airend intake opening port, to avoid entry of any foreign particles inside the airend

##### **Servicing of intake valve**

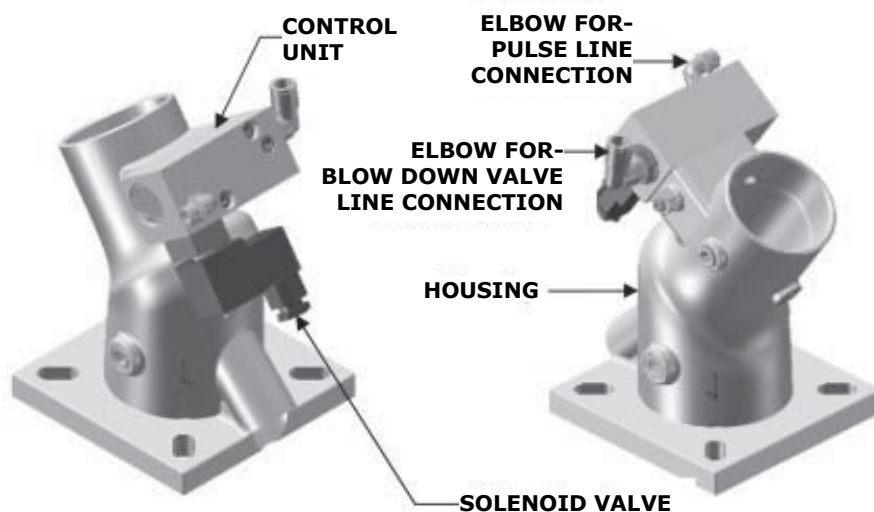
- Replace the service kits ( K2,K2/A,K2/B,K3,K2 block) in case of any failure or damage. Refer exploded view.

##### **Function test :**

- Connect the pressurized air to the control block and test smooth opening and closing of valve for several times

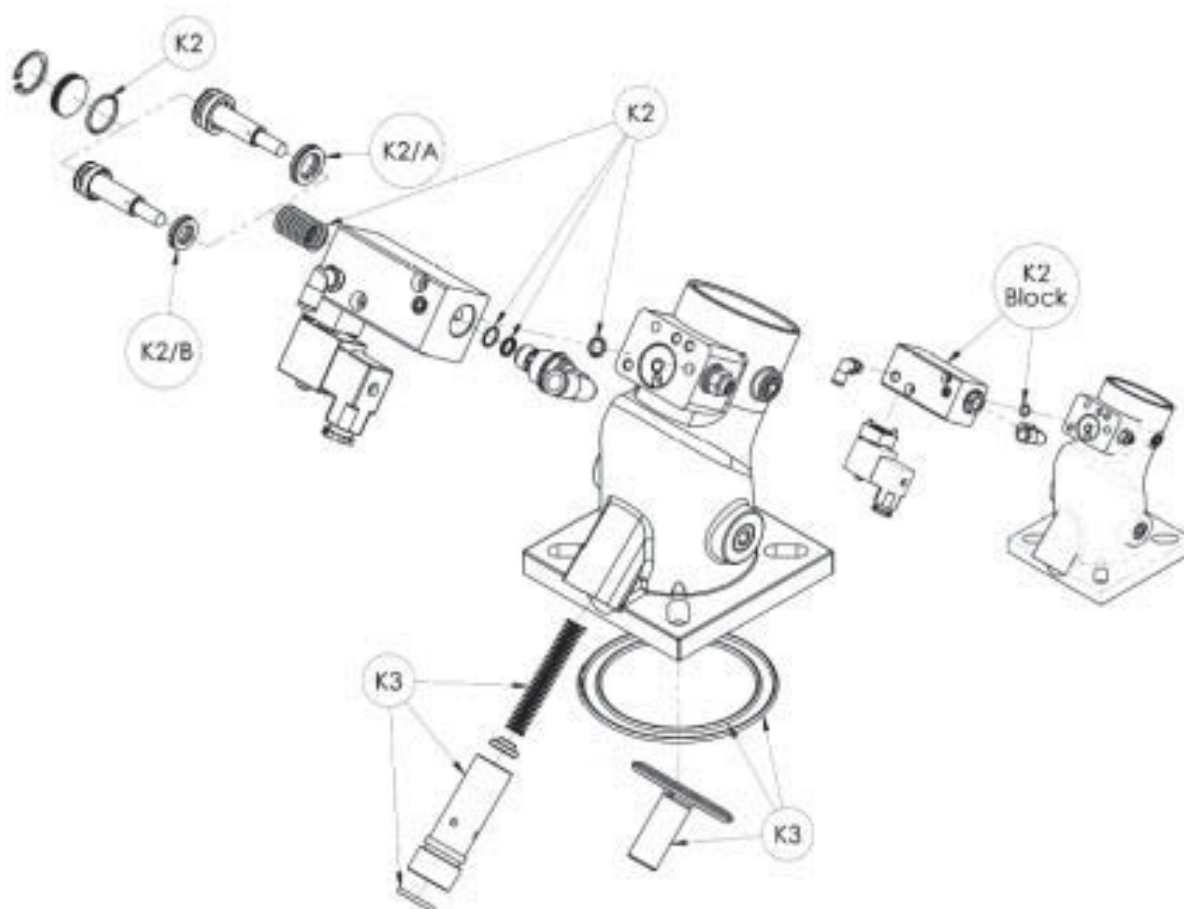
##### **Reassembly of intake valve**

- Ensure intake valve mating place (adaptor plate) free from dust and foreign particles
- Clean if any dust and foreign particles present in intake valve mating place
- Mount the intake valve on the adaptor plate (refer intake system)
- Ensure presence of sealing ring at the bottom of intake valve
- Reconnect the pulse line, BDV line and suction hose areas must not be damaged.



**Figure 17. Intake valve**

S. no	Service kit	Part number	Description	Remark
1	K2	B009405770009	Spare kit block	Refer spare kit detail table for complete intake valve kit part number
2	K3	B009405770010(30 kW) B009405770011(37 & 45 kW)	Body spare parts kit	
3	K2 block	B009405770007	Control block unit kit (blow down block kit)	



**Figure 18. Intake valve—Exploded view**



•

### 6.1.6 Minimum pressure valve

#### Pre work

- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool for a few minutes.
- Release the receiver tank and downstream pressure.

#### Requirements

- New MPV kit, allen key, grease.

#### Maintenance

#### MPV replacement (for 30 & 37kW)

##### Dismantling

- Isolate MPV from air-oil tank to MPV flange assembly and MPV to cooler flange assembly
- Remove plastic plug (1) and pull out round-headed pin (2).
- Unscrew and remove threaded ring (3) and remove washer (9).
- Take out spring (4) and circlip (10).
- Remove piston (5), check valve (7), spring (6) and O-ring (11).

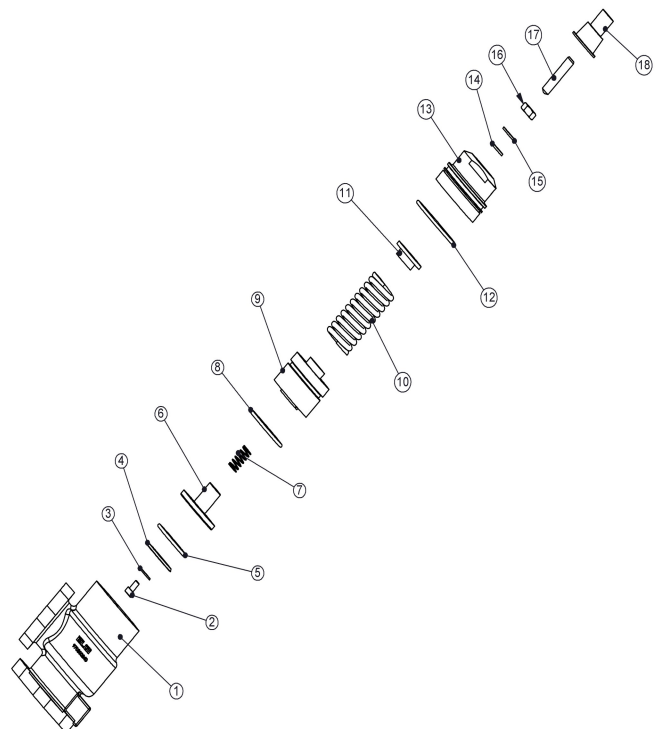
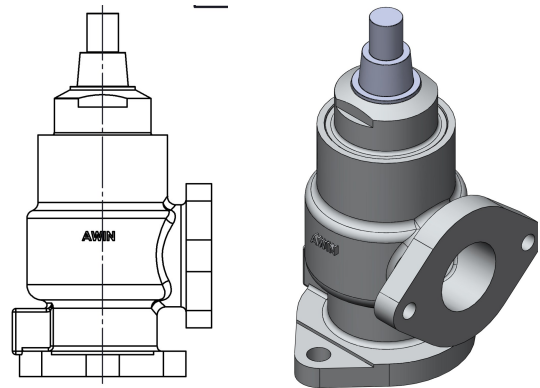
##### Cleaning and Lubrication

- Clean the piston work-surface and sealing seat with a liquid cleaner.
- Grease the threads, piston work-surface and check valve work-surfaces with autoltop 2000 (supplied in service Kit).
- Take care not to damage the seat and sealing surfaces

#### MPV replacement

##### Reassembly

- Put O-ring (11) into lower housing groove. Place check valve (7) with spring (6) centrally onto valve seat in housing (8).
- Insert piston (5), circlip (10) and spring (4). Lay washer (9) on spring (4) as shown in drawing.
- Screw in threaded ring (3) to its original position and secure it with round headed pin(2). Insert plastic plug (1).



#### WARNING

*Extreme caution should be taken while removing the cap or cover from the body because of the spring.*

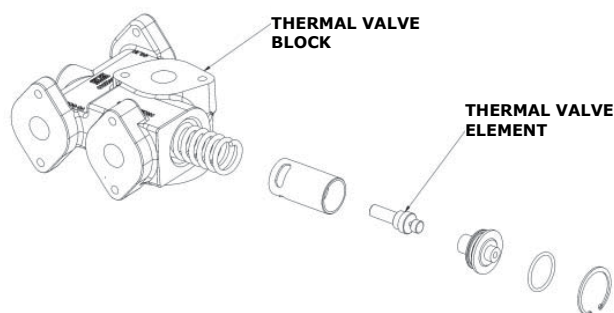


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### 6.1.7 Thermal valve

#### Pre work

- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool



**Figure 20. Thermal valve**

for a few minutes.

#### Requirements

- Pliers, screw driver, new thermal valve element, new O-ring.

#### Procedure

##### Replacing thermal Valve

- Remove the thermal valve element from the thermal valve block body
- Inspect and clean seating area in the housing
- Replace with a new thermal valve.

### 6.1.8 Electric motor greasing

#### Pre work

- Switch off the compressor and disconnect power supply to the compressor.
- Close the discharge end ball valve.
- Release air oil tank pressure and allow the tank to cool for a few minutes.

#### Requirements

- Recommended grease, cleaning cloth, grease gun.

#### Procedure

- Stop the motor and lock out the switch.
- Thoroughly clean the grease inlet fitting or plug. If the motor has a plug, remove the plug and clean the inlet.
- Remove the drain plug and wipe out any hardened grease.
- Slowly pump the grease into the grease inlet until the new grease comes out of the drain plug.

- Start the motor and let it run for a minimum of one hour to expel any excess grease from the drain opening before re-installing the drain plug.
- Stop the motor and lock out the switch.
- Re-install the drain plug.
- Put the motor back in operation.

### 6.1.9 Oil cooler

#### External cleaning of oil cooler

- Isolate the machine from the service line.
- Vent separator tank pressure before performing maintenance activities.
- Use compressed air less than 36 psi g (2.5 bar) to clean the outer surface of the cooler.
- Replace the vent cover.

#### Internal cleaning of cooler

- Use a 5 percent% (by volume) mixture of caustic soda in water. Circulate this mixture at 140oF (60°C) in the cooler for 5 hours. If required, increase the duration of circulation.

### 6.1.10 Belt maintenance

The belts must be tensioned regularly in order to avoid compressor efficiency loss, belt slippage, and belt failures.

**The belts are re-tensioned once every 2000 hrs.**

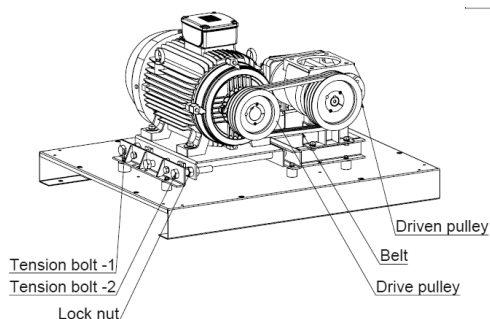
To tension the belt:

- Switch off and isolate the machine from the service line.
- Isolate the machine from power supply.
- Unlock and remove the belt guard, rear panel, and motor side panel.
- Do not tension belts when hot. Let them cool down to <140°F (60°C) before performing belt maintenance.
- Loosen the lock nut mounted in the belt tension bolt.
- Screw the tension bolt clockwise.
- Check the belt tension.
- Tighten the lock nut.
- Switch on the machine and verify running.

### 6.1.11 Belt replacement

To replace belts:

- Switch off and isolate the machine from the service line.
- Isolate the machine from power supply.



- Unlock and remove the belt guard, rear panel, and motor side panel.
- Loosen the lock nut in the belt tension bolt.
- Screw the belt tension bolt counterclockwise for five revolutions.
- Remove the old belts.
- Remove and inspect the grooves for wear and tear.
- Check the new belts to see if they are cracked or damaged. If ok, place the new belts in pulleys without damaging the belt. Tighten the tensioning bolt.
- Check the belt tension. Increase the tension if required.
- Tighten the lock nut.
- Switch on the machine and verify that the belt runs without wobbling.
- Let the machine run for 30 minutes.

- Switch off the machine and allow the belts to cool sufficiently.
- Check the belt tension again.
- Repeat the belt tensioning procedure to set the belts up to the required static belt tension as specified in the drive table .

Procedure for assembling taper lock bush	
<b>Step 1</b>	Clean and de-grease the bore and taper surfaces of the bush and the tapered bore of the pulley. Insert the bush in the pulley hub and line up the holes. (Half thread holes must line up with half straight holes.)
<b>Step 2</b>	Lightly oil the grub screws and screw them; do not tighten yet.
<b>Step 3</b>	Clean and de-grease the shaft. Fit the pulley by using the taper bush on the shaft and place it in the desired position.
<b>Step 4</b>	When using a key, it should be first fitted in the shaft keyhole. There should be a top clearance between the key and the keyhole in the bore of the bushing.
<b>Step 5</b>	Using the proper hexagon socket wrench, gradually tighten the grub screws in accordance with the torques as listed in the table below.
<b>Step 6</b>	When the drive has been operating under Step load for a short period (half to one hour), check and ensure that the screws remain at the appropriate tightening torque.
<b>Step 7</b>	Fill the empty holes with grease in order to remove dirt.

Torque values for taper lock bushes			
Taper lock bush number	Grub screw used	Qty	Torque value (lb. Ft)
1008 1108	1/4" BSW	2	14.1
1310 1315	3/8" BSW	2	14.8
1210 1215	3/8" BSW	2	14.8
1610 1615	3/8" BSW	2	14.8
2012	7/16" BSW	2	22.9
1610 1615	1/2" BSW	2	35.5

## Belt and pulley data

DRIVE TABLE : EN30X & EN37 60HZ										
Sl. No	Belt & Pulley parameters	UOM	30X-100	30X-125	30X-150	30X-175	37-100	37-125	37-150	37-175
1	Drive pulley pitch circle diameter	mm	150	150	180	150	150	150	150	150
2	Driven pulley pitch circle diameter	mm	224	250	315	315	190	212	224	250
3	Type of belt	-	XPA							
4	Pitch length of belt	mm	1257	1320	1482	1400	1257	1257	1257	1320
5	Static tension of NEW BELT	N	431-462	439-479	447-479	455-488	395-425	402-431	406-435	412-441
6	No of belts	Nos	3	3	3	3	4	4	4	4
7	Span length	mm	362	338	360	329	362	343	332	338
8	Mass of belt	g/m	80							

DRIVE TABLE : EN30X , EN37 & EN 45 50HZ											
Sl. No	Belt & Pulley parameters	UOM	30X-7	30X-9.5	30X-12.5	37-7	37-9.5	37-12.5	45-7	45-9.5	45-12.5
1	Drive pulley pitch circle diameter	mm	180	190	180	190	190	180	200	200	200
2	Driven pulley pitch circle diameter	mm	236	280	315	200	236	250	180	200	236
3	Type of belt	-	XPB								
4	Pitch length of belt	mm	1340	1450	1500	1320	1400	1400	1320	1320	1400
5	Static tension of NEW BELT	N	537-575	481-516	561-601	543-582	552-592	571-612	625-670	619-663	629-674
6	No of belts	Nos	3	3	3	3	3	3	3	3	3
7	Span length	mm	340	350	348	353	363	358	361	345	356
8	Mass of belt	g/m	140								

Torque values for standard fasteners / fittings	
Bolt size	Torque lb ft
M6	7.8
M8	18.5
M12	64
G3/8	52
G3/8 ( For Aluminium interface)	44.2
HOSE Swivel nut	62.5

### **6.1.12 Condensate drain in tank**

If the duty cycle of the compressor (running hours) per day is less than 16 hours, check for water condensation in the air oil separator tank. When the compressor switches off, the hot air inside the tank might condense when the surrounding temperature lowers. In such cases, drain the condensate from the separator tank weekly once or twice depending on the moisture quantity. The condensate, which is denser than oil, will settle at the lower part of the tank.

### **6.1.13 Procedure for draining the condensate**

To drain the condensate in the tank:

- Switch off and isolate the machine from the service line.
- Unscrew the drain plug from the oil drain line.
- Slightly open the drain ball valve.
- Check for water in the valve outlet. Close the valve immediately after draining the water to prevent leakage of more oil.
- Replace the drain plug. Tighten it firmly to avoid leaks.
- Dispose of the drained condensate as per the local environmental procedure.

### **6.1.14 Anti Vibration Mount**

Anti Vibration Mount should be replaced during major overhaul of airend or motor. If no such situation, replace AVM every 5 years

### 6.1.15 Use genuine spare parts

It is very important to use genuine spare parts, to ensure that your compressor works as new for its lifetime. Spurious spares may seem less expensive initially, but they severely compromise quality. Spurious parts will prove cost-ineffective in the long run, and may even result in total damage of the machine or cause serious accidents. The table includes certain critical spurious parts. It is not an exhaustive list, and you are strongly advised to avoid all other spurious spares that this table does not cover. Be aware of the consequences of using spurious spares including but not limited to the ones described in the table.

Effect	Spurious part	Remarks
Higher power consumption	Air oil separator	Due to dense filtration media, it creates an additional pressure drop and so causes additional power consumption. Every 1 bar (14.5 psi) of pressure drop results in ~7% additional power consumption.
	Lubricant	Spurious oil loses its properties soon and may get solidified causing the rotor to malfunction.
Reduced performance	Air oil separator	This imposes 10% additional resistance for air flow and creates more pressure drop and thus additional load on motor. Inadequate separation deteriorates air quality, reduces performance, and damages downstream components. It also results in huge oil loss (1L / 200hr).
	Oil filter	Contaminants are not filtered properly and the contaminated oil affects the critical parts of the air end. Thus it reduces performance and life (33% reduction) of the air end, air oil separator etc. Contaminated oil also causes clogging and reduces the cooler performance.
	Air filter	Dust carries over to the system and causes the same problems as caused by the spurious oil filter.
Safety hazard	Air oil separator	Inadequate earthing can cause a separator to collapse (25% risk). Inadequate earthing can also cause fire and destroy the entire machine.
Cost		Higher power consumption means a higher operating cost. Reduced performance leads to extra functioning and operating cost. Spurious parts will damage the other components and accelerate maintenance frequency and cost. Higher consumption of consumables like oil (due to the use of spurious parts) will result in increased cost.

## 6.2 Troubleshooting

This guide includes the most likely problems with possible causes. In case of a problem, follow the diagnosis in sequential order as mentioned in the following charts. Before performing any work in this unit, be sure to cut off electrical supply, depressurize the entire compressor, and isolate the unit.

Problem	Cause	Solution (go sequentially)
<b>Compressor not starting</b>	Power supply not available	Restore incoming power supply.
	Incoming voltage is below limit	(1) Correct the incoming voltage.
		(2) Ensure the isolator is within 5m from the compressor.
		(3) Ensure sufficient power backup.
		(4) Select and use the correct cable size.
	Emergency stop switch in pushed condition	Rotate counterclockwise and release.
	Emergency stop switch malfunction	Clean or replace the emergency switch.
		Tighten the wires at terminals.
	Isolator fuse blown	(1) Select the correct fuse rating from the selection chart.
		(2) Check and correct the short circuit within the control panel.
		(3) Dedicated isolator to be provided to the compressor.
		(4) Check and correct the motor winding/body short after the megger test.
	Incoming phase-to-phase voltage imbalance of more than 5V	Correct incoming voltage.
		Adjust main incoming transformer tapping.
		Correct the power factor to less than unity.
	Incoming phase-to-earth voltage imbalance of more than 5V	Correct incoming voltage.
	Control MCB malfunction	Replace MCB
	Control fuses inside compressor control panel blown	Check for any short circuit or loose connection.
		Replace the solenoid valve/control transformer if defective.
		Replace the glass fuse (2A for Neuron, 1A for the control circuit).
	Control transformer fuse blown	Replace the control transformer if defective.
		Replace the glass fuse (0.25A for Neuron, 0.5A for the control circuit).
	No power supply to Neuron controller.	(1) Replace control transformer fuses.
		(2) Ensure tight connection of the 24V power supply connector to Neuron.
		(3) Replace the control transformer (50VA).
	No display in Neuron controller	(1) Replace the control transformer (50VA).
		(2) Replace the control fuse.
		(3) If 24V power supply to Neuron is okay, then replace with a new Neuron micro controller.

Problem	Cause	Solution (go sequentially)
<b>High discharge oil temperature</b>	Oil level is low	(1) Check and refill oil to correct the level (in stopped condition).
		(2) Refer to the diagnosis procedure for high oil carry-over.
		(3) Arrest oil leaks.
		(4) Ensure the correct grade of oil is used.
	Room temperature is higher than outside ambient temperature by 30°C (86°F)	Improve ventilation in the compressor room.
	Oil cooler clogged externally	Clean the cooler assembly/pre-filter mesh (if available) externally by first using a fibre brush and then by blowing compressed air at 87 psi g (6 bar).
		For sticky dust, remove the cooler, close all the cooler ports with dummy plugs, and do a water-wash with soap oil.
		Install the cooler pre-filter mesh.
	Cooling fan rotating in wrong direction.	Check and correct the wiring connection to the cooling fan.
		Replace with the correct fan type.
	Check fan motor fuse	Replace the fuse if blown.
		Replace with the 2A fuse.
	Cooling fan not working.	Check and ensure the neutral connection is complete.
	Temperature sensor malfunction	Replace the sensor.
		Tighten/recrimp the connection with the adaptor.
	Oil filter clogged	Replace the oil filter.
		If required, replace the oil (based on the condition of oil) and run the compressor.
	Thermal valve malfunctioning	Replace the thermal valve element.
	Oil injection orifice choked or improper size	Clean the oil injection orifice.
		Replace with correct size.
	Air filter clogged	Clean or replace the air filter.
	Air-oil Separator element clogged	Verify pressure drop is less than 14.5 psi g ( 1bar).
		Replace oil.
		Replace separator element.
	Poor quality of oil	Replace oil.
	Oil cooler clogged internally	Check for pressure drop across the oil cooler if less than 21 psi g (1.5 bar).
		Check and clean the cooler internally with 20L of isopropyl alcohol + toluene mixture in the 1:1 ratio and circulate for 4 hours with external 1 HP pump.
		Refit the cleaned cooler and, if required, replace oil (based on the condition of oil) and run the compressor.

Problem	Cause	Solution (go sequentially)
High oil carry-over	High oil level	Drain excess oil and maintain the recommended oil level.
	Oil is milky	Replace oil and maintain the recommended level.
	Scavenge return line tube clogged	Remove and clean the clogged scavenge return line tube.
		Replace the internal pipe.
	High discharge oil temperature (DOT)	Refer to the diagnosis procedure for high DOT.
	Improper grade of oil	Use ELGi recommended air lube oil.
	Separator punctured/collapsed	Replace with a new separator.
	Separator element bonding ruptured	Replace with a new separator.
	Compressor runs at lower pressure than normal.	1) Use a suitable higher capacity compressor or match demand to compressor capacity.
	Compressor runs at lower pressure than normal.	2) Arrest all line leakages.
	Minimum pressure valve (MPV) opens earlier than the specified opening pressure of 65 psi g (4.5 bar).	Replace MPV kit/assembly.
	Neuron microcontroller pressure settings: 1) Unload pressure set value is above specification. 2) High tank pressure set value is below specification.	Check and correct unload pressure and high tank pressure values in the Neuron micro-controller.
		1) Check and replace the intake valve kit if required.
High tank pressure	Intake valve malfunction	2) Check the solenoid valve and clean or replace if required.
	Intake valve malfunction	3) Check and replace the actuator kit if required.
		Check/replace.
		Open the outlet ball valve.
	BDV malfunction	Check the solenoid valve and clean or replace if required.
		Replace the Neuron microcontroller.
		Replace the pressure transmitter.
	MPV stuck up (check with pressure gauge in AOS tank )	Replace the MPV kit.
	Separator element choked	Replace the separator element.
	Pressure transmitter malfunction	Replace pressure transmitter
	MPV stuck up (check with pressure gauge in AOS tank )	Replace MPV kit.
	Separator element choked	Replace separator element



Problem	Cause	Solution (go sequentially)
<b>Loading/unloading problem</b>	No control air supply to solenoid valve	Replace/connect
	Solenoid valve malfunctioning	1. Replace the solenoid valve assembly.
		2. Clean the orifice.
	No electrical supply for energizing the solenoid valve	Replace the Neuron microcontroller.
	Intake valve malfunctioning	Check and replace the intake valve kit.
	Blow-down valve malfunctioning	1. Clean or change the BDV assembly.
		2. Clean the orifice.
	MPV malfunctioning	1. Check and change the MPV kit.
		2. Check and change the MPV assembly.
	1. Air requirement is more than compressor capacity	1. Replace the compressor.
		2. Arrest all pipeline leakages.
	3. Excess pressure drop in pipeline	1. Replace the compressor.
		2. Arrest all pipeline leakages.
	Pressure transmitter malfunction	1. Tighten the lap cable.
	Pressure transmitter malfunction	
	Pressure transmitter malfunction	
	Pressure transmitter malfunction	4. Replace the Neuron microcontroller.
		Replace the Neuron microcontroller.
		Disable 'unload mode' in the operator settings of the Neuron microcontroller.
		4. Replace the Neuron microcontroller
	Malfunction of R04 relay (loading/ unloading relay) in Neuron microcontroller	Replace Neuron microcontroller
	Unload mode enabled in Neuron microcontroller	Disable 'unload mode' in operator settings of Neuron microcontroller

<b>Pressure not built up</b>	Inlet air pre-filter mat clogged	Clean/change the pre-filter mat by following these steps: Switch off the machine. Squeeze and pull out the pre-filter mat from the canopy. Clean the pre-filter with compressed air at less than 7 bar g. Refit the filter after cleaning.
	Clogged air filter element	Clean/change air filter element
	1. Air requirement is more than compressor capacity	1. Replace the compressor. 2. Arrest all pipeline leakages.
	2. Working pressure is lower than required application pressure	
	3. Excess pressure drop in pipeline	
	No control air supply to solenoid valve	Replace / connect the control line tubes.
	Solenoid valve malfunctioning	1. Replace the solenoid valve assembly.
		2. Clean the orifice.
	No electrical control supply to solenoid valve	Replace the microcontroller.
	Intake valve malfunctioning	Check and replace the intake valve kit.
	Blow-down valve malfunctioning	1. Check and change the BDV assembly.
		2. Clean the orifice.
	MPV malfunctioning	1. Check and change the MPV kit.
		2. Check and change the MPV assembly.
	Separator element choked (increase in pressure drop across separator)	Replace the separator element. If required, replace oil (based on the condition of oil) and run the compressor.
		2. Change pressure regulator assembly.
	Actuator failure (applicable only to EG 55 to EG 250)	Check and change actuator / kit / assy.
	Separator element choked (increase in pressure drop across separator)	Replace separator element. If required replace the oil (based on condition of the oil) and run the

## 6.3 Decommissioning, dismantling and putting out of service

If you do not intend to use the compressor or any of its parts, you must dismantle and put it out of service. These tasks must be performed in compliance with the standards in force of that particular country.

### 6.3.1 Waste disposal

- Use of the compressor generates waste. The residues from agricultural, industrial, crafts, commercial, and service activities must be treated as waste, which needs to be disposed of properly. Deteriorated or obsolete machines are also classified as waste.
- Special attention must be given to active carbon filters as they cannot be included in urban waste. Observe the waste disposal laws in force where the compressor is used.
- It is mandatory to record loading or unloading of exhausted oils, obsolete machines, and toxic harmful wastes that derive from heavy or light industry processes.
- It is especially important that exhausted oils be disposed of in compliance with the laws in the countries of use.

### 6.3.2 Dismantling the compressor

- Dismantle the compressor in accordance with all the precautions imposed by the laws in force in the country of use.
- Before dismantling, request an inspection by the relevant authorities. Disconnect the compressor from the electrical system.
- Eliminate any interfaces the compressor may have with other machines, making sure that interfaces between remaining machines are unaffected.
- Empty the air oil tank containing the lubricating oil and store in compliance with the laws in force.
- Proceed with the disassembly of the individual compressor components and group them together according to the materials they are made of: Steel, Stainless Steel, Aluminum and plastic parts.
- Then scrap the machine in compliance with the laws in force of the country of use.

### 6.3.3 Decommissioning the compressor

- Remove the foundation for the compressor.
- Unplug the power cable entry to the compressor.
- Drain the oil from the cooler and air oil tank. Dispose of it properly.
- Make sure all the compressed air is vented out through ball valves and safety devices residing in the compressor.
- Ensure that all the external supply lines have been properly disconnected from the compressor before decommissioning.

### 6.3.4 Disposal of consumables and replaced parts

- The moisture condensate separated from the compressed air contains oil particles. Disposal of condensate and the filter element is to be performed in accordance with the pollution control norms prevailing at the time of compressor installation or use.
- Parts of the compressor that are replaced have metal and rubber components. These may be recycled and disposed of according to pollution control regulations, respectively.
- Rubber items such as AVMs, coupling elements, and O-rings should be disposed of and replaced before running again.

#### NOTE

*ELGi is not responsible for the disposal of old oil or condensate. It is the responsibility of the customer to dispose of the foregoing in accordance with local environmental statutory laws.*

#### WARNING

*The compressor does not give any warnings during short operating times. If it is operated below the dew point and moisture, then condensate may mix with oil. This will reduce the lubricating quality of the oil and lead to damage of the compressor.*

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### 6.4.1 ELGi customer care system (ELGi CCS)

ELGi provides dedicated customer care and after-sales support through the ELGi customer care system (CCS), a computerized system developed in-house. The CCS aims to minimize the time taken to resolve customer complaints.

#### Service requests/complaints

The CCS toll-free telephone number 1800-425-3544 (accessible within India through BSNL and MTNL lines) takes the customer's call to our centralized customer care center in Coimbatore. Customers can register their service requirements or complaints here.

A unique tracking number is generated for each call logged by the CCS. The customer receives an automatic e-mail acknowledgement with the tracking number and details of the call for reference.

A service engineer is assigned to the call, and the date and time of the engineer's visit are communicated to the customer by e-mail. Every requirement or complaint must be resolved and closed in the CCS within a specified time limit, failing which the complaint is automatically brought to the notice of the manager. If the issue remains unresolved, it will get escalated to the managing director. The CCS ensures that not only the customer complaints are logged but they are also attended to on time, every time.

#### Enquires

A number of calls received by the CCS relate to customer queries regarding products and spare parts. The details are noted, and basic information on product specifications and usage are provided. The caller is then referred to a salesperson at the head office or the appropriate branch for follow-up.

#### The CCS database

The CCS also creates a database of customers, adding details of every new customer who calls, thereby building a large pool of installation details. These details are used to provide value-added services to improve customer satisfaction with ELGi products.

#### CCS-working hours

The ELGi CCS works for six days a week from 08:30 to 21:30 IST (Monday to Saturday).

#### Multi-lingual capability

The coordinators at the CCS are multi-lingual. They can handle calls in English and all the major regional languages of India.

**Coverage:** The CCS toll-free number 1800-425-3544 is accessible from the following areas:

- **Southern Region:** Tamil Nadu, Karnataka, Kerala, Puducherry, Andhra Pradesh, Telangana, Andaman & Nicobar Islands.
- **Western Region:** Maharashtra, Gujarat, Madhya Pradesh, Goa, Lakshadweep Islands.
- **Eastern Region:** Orissa, Chhattisgarh, Jharkhand, West Bengal, Bihar and the North-Eastern states.
- **Northern Region:** Rajasthan, Uttar Pradesh, Delhi, Haryana, Punjab, Uttaranchal, Himachal and Jammu & Kashmir.

**Contact Numbers:** You can contact CCS also with the following numbers:

**Telephone:** 0422-2589206 / 241 / 242 / 243/ 244 / 245 / 97900 21100

**Fax:** 0422-2589240

#### International toll free numbers:

Australia	1800 813 1777
Indonesia	0804 111 3544
Malaysia	1800 816 553
Thailand	001800 1320 42905
USA	usaspare@elgi.com / usaservice@elgi.com

For international customers:

Please send the following details to the mail, thus enable us to take immediate action.

1. Name of the customer
2. Compressor model
3. Fab. number
4. Contact person name
5. Phone number
6. Nature of complaint
7. Hour meter reading

You may use the CCS by sending e-mail to: **ccs@elgi.com**

#### Customer satisfaction survey

If you have used the CCS, you may be contacted for your feedback on our after-sales support. Your response helps ELGi to improve its service.

### 6.4.2 ELGi genuine spare parts

When ordering spare parts, refer to the lists provided in the parts manual and identify the part number. Specify the part number and quantity, in addition to the name plate details. Global support center of ELGi ensures the supply of the quality spares on time. Ensure that you are using the genuine spare parts so that your Compressor will be working efficiently and effectively. Refer to section 6.1.3 for details on need of using genuine spares.

Please contact our After sales team for any compressor accessory requirements like VFD, Air-Dryer, etc.

### **6.4.3 Air audit**

We extend our proven capabilities in energy efficiency initiatives by carrying out air audits for our customers.

ELGi conducts audits and trains end users in key energy oriented functional areas. The audit reports prepared by ELGi experts' team include recommendations on short, medium and long term measures for energy conservation, along with financial estimates and analysis for implementation.

This air audit objective is to provide the customer:

- The framework for systematic collection of data relevant to the efficient operation of compressed air systems.
- A thorough analysis about the performance of the compressed air system, identifying potential electricity savings and to provide sound recommendations for implementation of energy efficiency initiatives.

Data analysis will be comprised of the information about different areas such as air leakages, inappropriate use of compressed air, compressed air system network, compressed air system supply including compressor internal maintenance conditions and even more.

The final report issued to the customer end will serve the purpose of assisting concise, consistent and complete presentation of the analysis, findings and recommendations arising from a compressed air system audit.

Depending on the measurement, reporting and cost requirements from the customer end, the intensity in level of audit (base level or investment level) will be decided. Also post implementation monitoring after air audit will be provided if requested from the customer end.

For further information on air audit contact ELGi.

**E-Mail:** [ccs@elgi.com](mailto:ccs@elgi.com)

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### 6.5.1 Conversion tables

Description	From	To	Multiply by
Length (L)	Inches	Millimetres	25.4
	Metres	Inches	39.37
	Feet	Millimetres	304.8
	Metres	Feet	3.281
	Inches	Thou	1000
	Millimetres	Micrometres	1000
Area (A)	Square metres	Square feet	10.765
	Square feet	Square inches	144
	Square inches	Square millimetres	645.16
Volume (V)	Cubic metres	Cubic feet	35.315
	Cubic feet	Cubic inches	1728
	Cubic metres	Litres	1000
	Cubic feet	Litres	28.32
	US gallons (liq)	Litres	3.785
	Imperial gallons (liq)	Litres	4.546
Volumetric flow (Q)	Cubic feet per minute (cfm)	Cubic metres per hour (m <sup>3</sup> /h)	1.6988
	Cubic feet per minute (cfm)	lpm	28.32
	Cubic metres per hour (m <sup>3</sup> /h)	lpm	16.667
	Cubic metres per minute (m <sup>3</sup> /min)	lps	16.667
Mass (M)	Kilograms	Pounds	2.205
	Kilograms	Grams	1000
	Kilograms	Ounces	35.27
Pressure (P)	kg f/cm <sup>2</sup> g	psi g	14.223
	psi g	Pascal	6895
	bar g	kg f/cm <sup>2</sup> g	1.0197
	bar g	psi g	14.503
	psi g	kg f/cm <sup>2</sup> g	0.0703
Temperature (T)	Degree Celsius (°C)	Degree Fahrenheit (°F)	°F = 9(°C)/5 + 32
	Degree Celsius (°C)	Kelvin (K)	K = °C + 273.15
	Degree Fahrenheit (°F)	Degree Rankine (°R)	°R = °F + 460
Heat (q), Work (W), Energy (E)	ft-lb f	Joules	1.35582
	ft-lb f	Btu	0.001285
	Joules	Calories	0.2388
	Btu/h	Calories/h	252
	Kilowatts	Btu/h	3411
Power (P)	Metric horsepower	Kilowatts	0.7355
	Imperial horsepower	Kilowatts	0.7457

**Table 13.1: Conversion table**

## 6.5.2 Torque values

The tightening torque values for bolts and screws used in ELGi Compressors are provided in this section for reference. The tolerance for the torque values is (-) 10% from the given value.

Thread size*	Tightening torque (N-m)	Tightening torque (lb-ft)
M4	2.9	2.13
M5	5.7	4.20
M6	9.8	7.22
M8	24	17.7
M10	47	34.66
M12	81	59.73
M16	197	145.28
M20	385	283.93

**Table 13.2: Metric hexagonal head bolts and screws**

Thread size (inches)	Tightening torque (N-m)	Tightening torque (lb-ft)
1/4"	45	33.19
1/2"	85	62.69
3/4"	170	125.38
1"	330	243.39
1 1/4"	430	317.15
1 1/2"	510	376.15

**Table 13.3: BSP threads**

Thread size (inches)	Tightening torque (N-m)	Tightening torque (lb-ft)
9/16"	149	109.8875
7/8"	579	427.0125

**Table 13.4: UNF threads**

\* Property class of 8.8 only

[illegible]



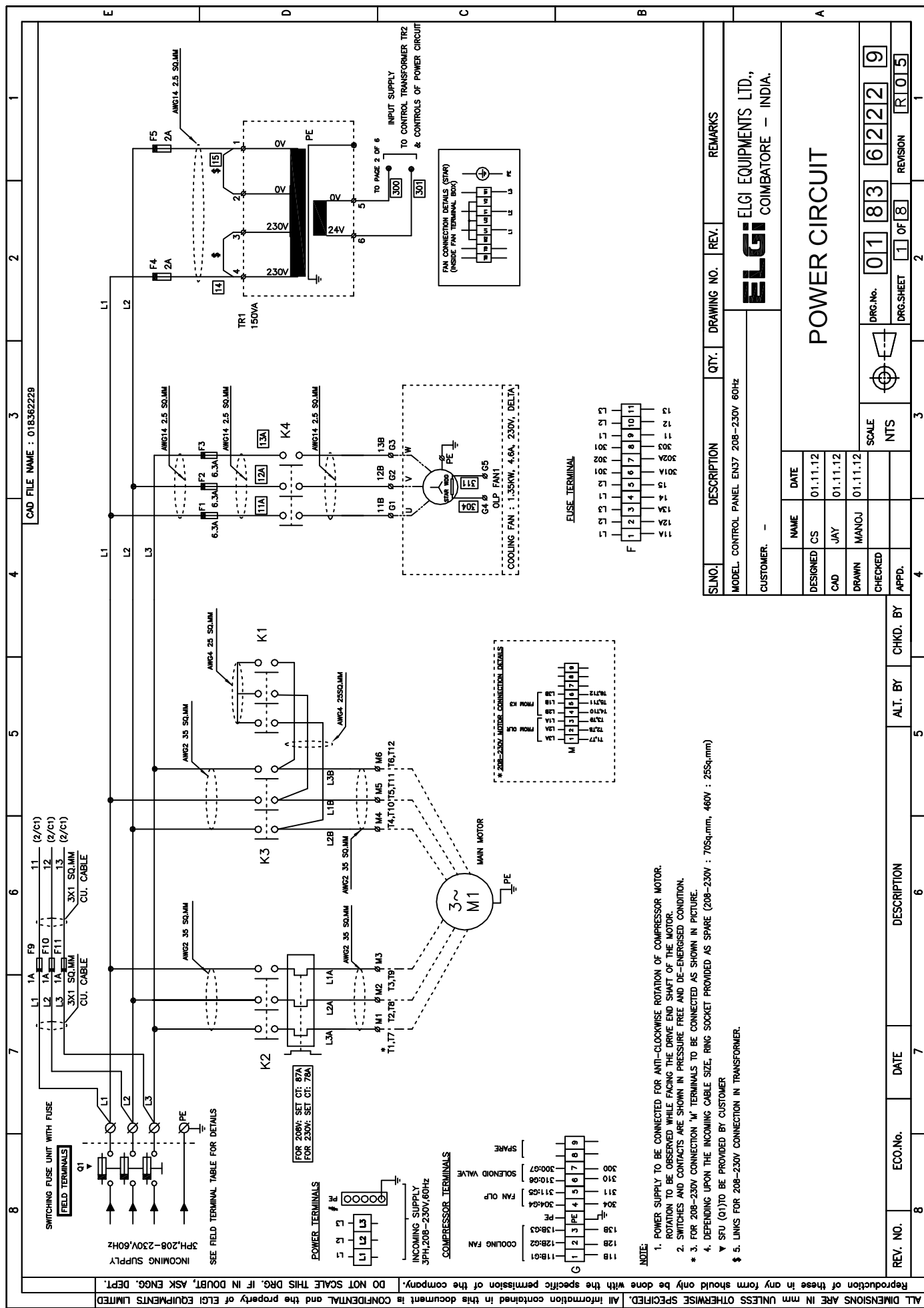


Please read this document and the warranty terms accompanying the product carefully before using our product. By purchasing our product, you agree that you will assume total responsibility and risk for your use of the product. The warranty terms of the product have been provided separately.

1. ELGi is not liable for failure of the compressor ( hereinafter “compressor” or “product”) to perform its obligations if such failure is as a result of Acts of God (including but not limited to fire, flood, earthquake, storm, hurricane or other natural disaster), war, invasion, act of foreign enemies, hostilities (regardless of whether war is declared), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities, nationalization, government sanction, blockage, embargo, labour dispute, strike, lockout or interruption or failure of electricity or telephone service and any other reasons beyond ELGi’s control.
2. ELGi does not take responsibility for any damage or injury resulting from neglecting the safety instructions, warnings, cautions, precautions, or non-observance of the normal caution and care required for installation, operation, maintenance and repair of the product, even if not expressly stated, and such instances are specifically disclaimed by ELGi.
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7. These Disclaimers and the contents of this manual shall be subject to the laws of India and any disputes pertaining to this manual or anything stated therein or any product stated therein is subject to the exclusive jurisdiction of the courts in Coimbatore, Tamil Nadu, India.
8. No liability in connection with the product will accrue to ELGi,
  - If any welding or related operation involving heat is carried out in the compressor. Never weld or modify any parts including pressure vessels.
  - If any damages to the product directly or indirectly arise due to long storage (6 months) of product and subsequent corrosion of internal parts and which leads to fire or malfunctioning of the product.
  - If the compressor package and its accessories are installed in such a way to allow moisture, rain, freezing temperature or sun damage to affect the safe operation of the unit.
  - If the person who operates / maintains the compressor does not adhere to all work related safety practices and regulatory requirements.
  - If unauthorized personnel other than ELGi authorized or trained personnel carries out commissioning, installation, operation, maintenance and any repair work on the compressor.
  - If the compressor and the compressed air are used for unintended use or are misused.
  - If the compressor is operated below or in excess of its pressure and temperature limits.
  - If the compressor “ON/ OFF” switch is operated through remote control situated away from the compressor location without giving any adequate notice / alarm before starting the product .

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**NOTE:**

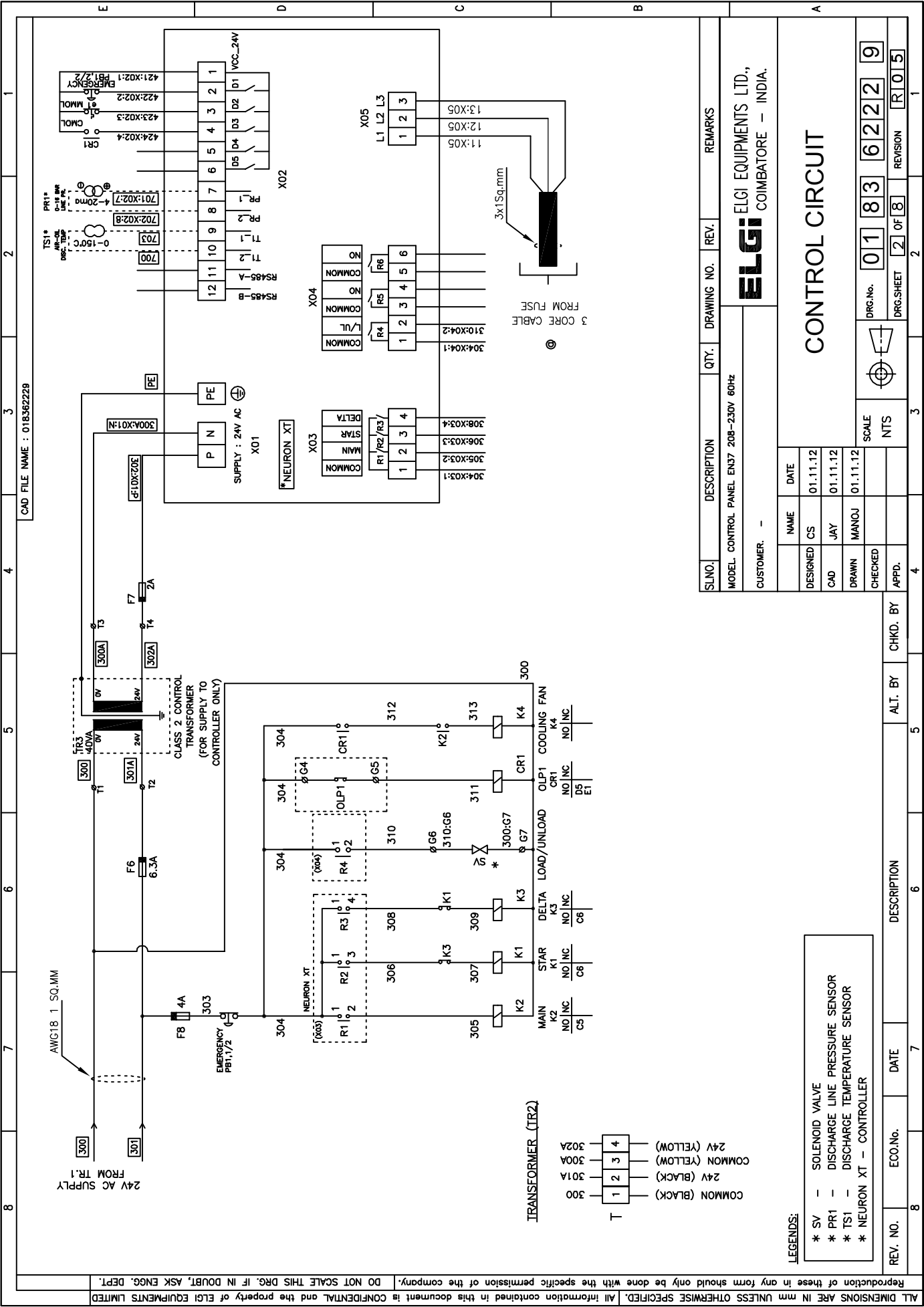
1. POWER SUPPLY TO BE CONNECTED FOR ANTI-CLOCKWISE ROTATION OF COMPRESSOR MOTOR.  
ROTATION TO BE OBSERVED WHILE FACING THE DRIVE END SHAFT OF THE MOTOR.
2. SWITCHES AND CONTACTS ARE SHOWN IN PRESSURE FREE AND DE-ENERGISED CONDITION.
- \* 3. FOR 208~230V CONNECTION "M" TERMINALS TO BE CONNECTED AS SHOWN IN PICTURE.

4. DEPENDING UPON THE INCOMING CABLE SIZE, RING SOCKET PROVIDED AS SPARE (208-230V : 70Sq.mm, 460V : 25Sq.mm)

▼ SFU (Q1) TO BE PROVIDED BY CUSTOMER

**\$ 5. LINKS FOR 208-230V CONNECTION IN TRANSFORMER.**

[illegible]



SLNO.	DESCRIPTION	QTY.	DRAWING NO.	REV.	REMARKS
1	MODEL: CONTROL PANEL EN37 208-230V 60Hz				
2	CUSTOMER: -				
3	NAME	DATE			
4	DESIGNED CS	01.11.12			
5	CAD JAY	01.11.12			
6	DRAWN MANOJ	01.11.12			
7	CHECKED				
8	APPD.				
9	CHKD. BY				
10	ALT. BY				
11	DESCRIPTION				
12	ECO.No.				
13	DATE				
14	REV. NO.				

ELGI		ELGI EQUIPMENTS LTD.,		COIMBATORE - INDIA.	
CONTROL CIRCUIT					
DRG.No.		01 83 6222		9	
DRG.SHEET		2 OF 8		REVISION	
SCALE		NTS			
CHECKED					
APPD.					
CHKD. BY					
ALT. BY					
DESCRIPTION					
ECO.No.					
DATE					
REV. NO.					

LEGENDS:

- \* SV - SOLENOID VALVE
- \* PR1 - DISCHARGE LINE PRESSURE SENSOR
- \* TS1 - DISCHARGE TEMPERATURE SENSOR
- \* NEURON XT - CONTROLLER

TRANSFORMER (TR2)

T

1 2 3 4

COMMON (BLACK) 24V (BLACK) 300A

COMMON (YELLOW) 24V (YELLOW) 300A

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED. All information contained in this document is confidential and the property of ELGI EQUIPMENTS LIMITED. Reproduction of these in any form should only be done with the specific permission of the company. DO NOT SCALE THIS DRG. IF IN DOUBT, ASK ENGG. DEPT.

8

7

6

5

4

3

2

1

CAD FILE NAME : 018362229

BILL OF MATERIALS

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DO NOT SCALE THIS DRG. IF IN DOUBT, ASK ENGR. DEPT.

CODE	DESCRIPTION	MAKE	RATING	PART NO.	QTY
K2,K3	POWER CONTACTOR (MAIN-DELTA)	SIEMENS	95A,3RT10 46-1AC20+3RT19 36-1CB00	008930109+018400198	2
K1	POWER CONTACTOR (STAR)	SIEMENS	80A,3RT10 45-1AC20+3RT19 36-1CB00	008930108+018400198	1
-	AUXILIARY CONTACT ADD ON BLOCK	SIEMENS	3RH19 21-1EA11 (SIDE MOUNTING)	008900420	2
-	AUXILIARY CONTACT ADD ON BLOCK	SIEMENS	3RH19 21-1EA20 (SIDE MOUNTING)	008900410	1
e1	OVERLOAD RELAY MAIN MOTOR	SIEMENS	25-100A,3RB20 46-1EB0	018362636	1
K4	POWER CONTACTOR FOR COOLING FAN	SIEMENS	9A,3RT20 23-1AC20+3RT29 26-1CB00	008900170+018400197	1
TR1	MULTI TAP TRANSFORMER	PLITRON	150VA, 0-0-230-230V/0-24V	00893703A	1
TR2	CONTROL TRANSFORMER 40VA	BASIC ELECTRICAL	40VA, 0-24V/0-24V	00893703C	1
CR1	CONTROL RELAY	PHOENIX	2961192	008946236	1
CONNECTOR	NEURON XT CONNECTOR	WAGO	PIN : 2,3,4,6,12	00897903T	1
INCOMING TB	TERMINAL BLOCK - PHASE	PHOENIX	UHV 95 WITH HOOD	00894642K	3
END CLAMP	TERMINAL BLOCK - END CLAMP	PHOENIX	-	00894642G	4
PE	EARTH BAR STRIP FOR COMPONENT EARTH WITH 5mm SCREW WITH FLAT & SPRING WASHER	-	-	-	-
G,T	CONTROL TERMINALS	WAGO	281-101	018362734	13
PE	CONTROL TERMINALS	WAGO	281-107	018362733	1
F	FUSE TERMINALS	WAGO	281-611	018362735	11
-	GLASS FUSE	PROTECTOR	1A, SLOW BLOW	00894641A	6
-	GLASS FUSE	PROTECTOR	2A, SLOW BLOW	00894642A	6
-	GLASS FUSE	PROTECTOR	4A, SLOW BLOW	00894644A	2
-	GLASS FUSE	PROTECTOR	6.3A, SLOW BLOW	00894646A	8
NXT	NEURON XT CONTROLLER	ELgi	-	018362887	-
M	MOTOR TERMINALS	PHOENIX	RSC 6-F E (WITH SEPARATE END PLATES)	008932070	9
PR1	PRESSURE TRANSMITTER	DANFOSS	-	00897902N	1
TS1	TEMPERATURE TRANSMITTER	DANFOSS	PT1000	018400078	1
PB1	EMERGENCY STOP WITH FULL DIAL PLATE	ESBEE	EMN MH1+2 NOS NC CONTACT BLOCK	008940027	1

TRANSFORMER TAPPINGS & OLR SETTING NEED TO BE CHANGED  
ACCORDING TO VOLTAGE CONDITION(230V/460V) AT SITE

FEMALE CONNECTOR SET FOR NEURON-XT ENCAP (00897903T)

SLNO.	DESCRIPTION	QTY.	DRAWING NO.	REV.	REMARKS
MODEL CONTROL PANEL EN37 208-230V 60Hz					
CUSTOMER. -					

ELGI

ELGI EQUIPMENTS LTD.,  
COIMBATORE - INDIA.

BOM

NAME	DATE
DESIGNED CS	01.11.12
CAD JAY	01.11.12
DRAWN MANOJ	01.11.12

SCALE

NTS

REV. NO.	ECO.No.	DATE	DESCRIPTION	ALT. BY	CHKD. BY
8		7		5	4

DRG.No.

01

83

61222

9

DRG.SHEET

31

OF

8

REVISION

R105

1

2

3

4





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