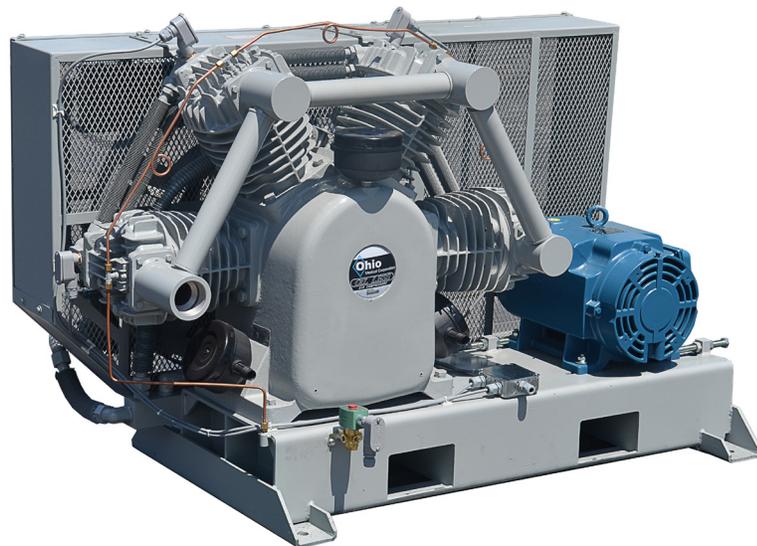




Air Compressor P20-M / P25-M / P30-M

Operation Manual



PREFACE

Thank you for purchasing an Ohio Medical air compressor. This manual introduces our Oil-less Air Compressors to users about all the information required for air compressor installation, operation and maintenance to ensure the most efficient and trouble-free operation.

In any situation of the product being tampered or repaired with parts not supplied by Ohio Medical Corporation, serviced by unauthorized personnel, or where recommended maintenance procedures have not been followed, etc, the warranty is void.

This compressor is intended for compressing atmospheric air only and is strictly prohibited from compressing any other gas.

Ohio Medical compressors incorporate the latest design of technology and use only components selected for their high quality and durability to ensure more efficient and durable operation.

We constantly strive to meet the best quality and durability standards and reserve the right to change specifications if required. Thank you again for your interests and continuous support to of Ohio Medical products.

“Proper Maintenance Leads To Long Service Life”

Safety Precautions:

1. Risk of Hot Surfaces

NEVER touch the discharge tube, cylinder and cylinder head while in operation.

2. Risk of Danger

Do not remove, make adjustment to, or substitute the protection devices. Any adjustment against the factory setting will automatically void the warranty.

Product Specifications

MODEL	P20-M	P25-M	P30-M
PART #	100-0225	100-0226	100-0227
HORSEPOWER	20	25	30
CFM @ 50 PSI	75	90	106
CFM @ 100 PSI	62	76	92
MAX PRESSURE	115	115	115

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1. General Description

- 1.1 This is an Oil-Less air compressor.
- 1.2 The cylinder is uniquely designed with W-type arrangement; the high rigid structure guarantees low-vibration, stable and reliable operation.
- 1.3 Suction/Discharge valve assembly is made of high strength stainless steel alloy, which allows quick heat dissipation; low noise level; high efficiency; and longer working life.
- 1.4 The well-designed ductile iron crankshaft integrated with counterweight is precisely balanced for smooth, and long-term operation.
- 1.5 The cylinder is made of aluminum alloy material with cooling fin design and special coating to ensure durable operation.
- 1.6 Compression ring and guide ring are made of Teflon® material to ensure anti-friction and smooth operation.
- 1.7 Bearing is totally enclosed with heat resistant grease to ensure long working life.
- 1.8 Special design on Air Outlet Connectors, for easy maintenance.

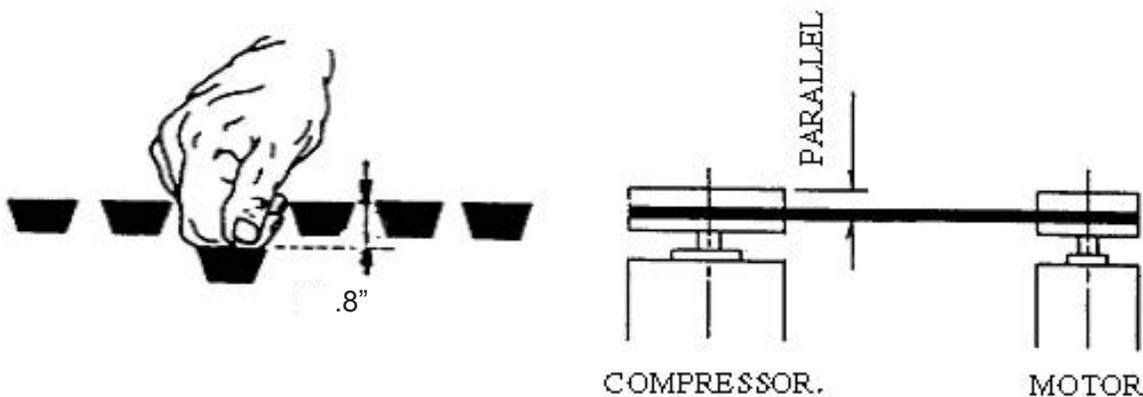
2. Installation

- 2.1 The unit must be located in an area with good ventilation and enough space for maintenance work.
- 2.2 Never place the compressor in an area where the atmosphere is dusty, damp or where corrosive vapors may enter the unit.

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- 2.3 The machine must be leveled in all directions and must be firmly mounted.
 - 2.4 The flywheel, which is also a fan for circulating air over the cylinder, should never be placed closer than 12" against the wall, so there is plenty of cooling air circulation.
 - 2.5 Improper installation and maintenance may result in abnormal conditions such as:
 - 1) Insufficient cooling, higher ambient temperature, insufficient cooling space, and incorrect rotation direction all may easily result in over heating the compressor, electric motor and compressed air.
 - 2) Placing the unit in a damp and dusty environment may fill the compressed air with high moisture and create damage to the control system.
 - 3) Severe vibrations will happen when feet are uneven or mounted on a non-solid floor or nuts and bolts are not securely tightened.

3. V-Belt Adjustment

- 3.1 Keep the grooves of flywheel and motor pulley clean.
- 3.2 Align flywheel with pulley groove when installing the V-belts.
- 3.3 Over tightened belts can cause extra load and shorten the life of the motor bearings. Overly loose belts can cause V-belt slippage, reduce efficiency and break V-belt.
- 3.4 Maintain the proper belt tension.
 - 1) Use belt adjuster to correct belt tightness (adjust the tightness according to belt type, center distance and belt length).
 - 2) Push the belt at its central point by hand to check the belt tightness as below: Press down firmly on each individual belt and check the deflection to be .8" as shown on the following picture.



4. Safety Device

- 4.1 Besides Automatic pressure switch and Automatic unloader as standard protective components, the following optional safety accessories are also available.
- 4.2 The air compressor should be equipped with a relief valve to avoid any danger from excess pressure. The relief valve is designed according to Pressure Vessel regulations.

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- 4.3 Motor should follow regulations to be equipped with Magnetic switch and Overload relay to avoid the motor current over pre-setting limit.

5. Operation

5.1 Checks before starting

- 1) Make sure that electrical connections comply with local electrical regulations.
- 2) Check set bolts and nuts to be securely tight.
- 3) Check V belt for proper tension.
- 4) Check that electrical cables are correct and securely tight.
- 5) Check that voltage is correct.

5.2 Checks under operation

- 1) If rotating direction of compressors is right.
- 2) If compressed air pressure rises normally while running.
- 3) If current of the motor remains within standard level under loading condition.
- 4) Stay away from extremely hot components.

6. Daily Maintenance

- 6.1 Clean the Belt Guard and the ventilation area of the air compressor frequently to ensure proper cooling.
- 6.2 Inspect if there is unusual noise or if temperature is too high.
- 6.3 Check if there is abnormal vibration.
- 6.4 Check if voltage & current of the power supply are correct.

7. Periodical Maintenance

7.1 Check the below parts periodically.

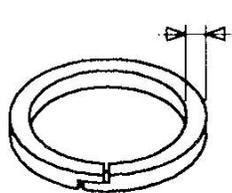
HR		250	3000	6000	8000	Instructions
		(1 month)	(12 months)	(24 months)	(30 months)	
Check items						
Intake Filter		○				Clean with brushes and compressed air. (replace once 6 months.)
V-belt loosen		○				Adjust and follow instructions in operation manual
Bolt(Nut) loosen		○				Tighten bolts(nuts) with proper tools.
Must Do	Valve assembly leaking		○			Inspect & clean spare parts. Test if leaking or not.
	Compression ring		○	○	◎	Check/Replace
	Guide ring		○	○	◎	Check/Replace
	Connection Rod a. Big end b. Small end		○	○	◎	If function well or any noise
Cylinder			○	○	○	Check./Replace

Remarks: 1. ○ --- Check/Maintain, Replace when necessary
2. ◎ --- Replace

7.2 Maintenance, repair or modifications must only be carried out by qualified personnel with authorized training.

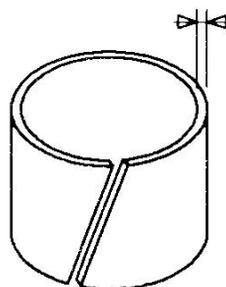
- 1) When the air compressor is working under normal conditions, we recommend to maintain as per above time table. If required, you may shorten the maintenance interval.
- 2) To ensure efficient compression, any piece of Compression Ring and Guide Ring should be replaced if it's worn-out as shown on the table below.

Spare part	Ø130	
	Compression ring	Guide ring
The radial direction thickness of new pieces (mm)	10	2.4
The radial direction thickness of worn-out limit (mm)	8	1.8



The radial direction thickness

Check the Compression ring



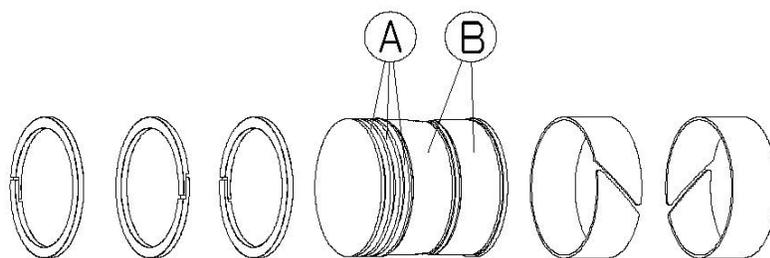
The radial direction thickness

Check the Guide ring

- 3) Check the thickness of compression ring and guide ring periodically. Record the data in your service log.
- 4) If the compressor has not run for a long time, it should be set on no-load running for at least 30 minutes per month to keep the bearings and related parts in regulator running condition.

7.3 Key points during Disassembly and Assembling:

- 1) Before disassembly, be sure to turn off the power and release the pressure of air tank to ensure safety.
- 2) After disassembly, place the parts in order on a clean box or paper to enable re-assembly later.
- 3) While assembling, pay attention to the cleanness of environment and working tools, especially for those parts like piston, compression ring, guide ring, cylinder and valve assembly. Avoid dust and contamination of these parts.
- 4) Pay attention to the direction of compression ring and guide ring . If not, the air delivery will be decreased.
- 5) The bearing is totally enclosed with heat resistant grease. If there is abnormal noise, please contact local service agent for service.
- 6) While assembling, be sure to tighten the screws, nuts and related parts properly.
- 7) After disassembly, the liner (the liner on the cylinder head and the cylinder) should be replaced with a new one and then re-assembled.

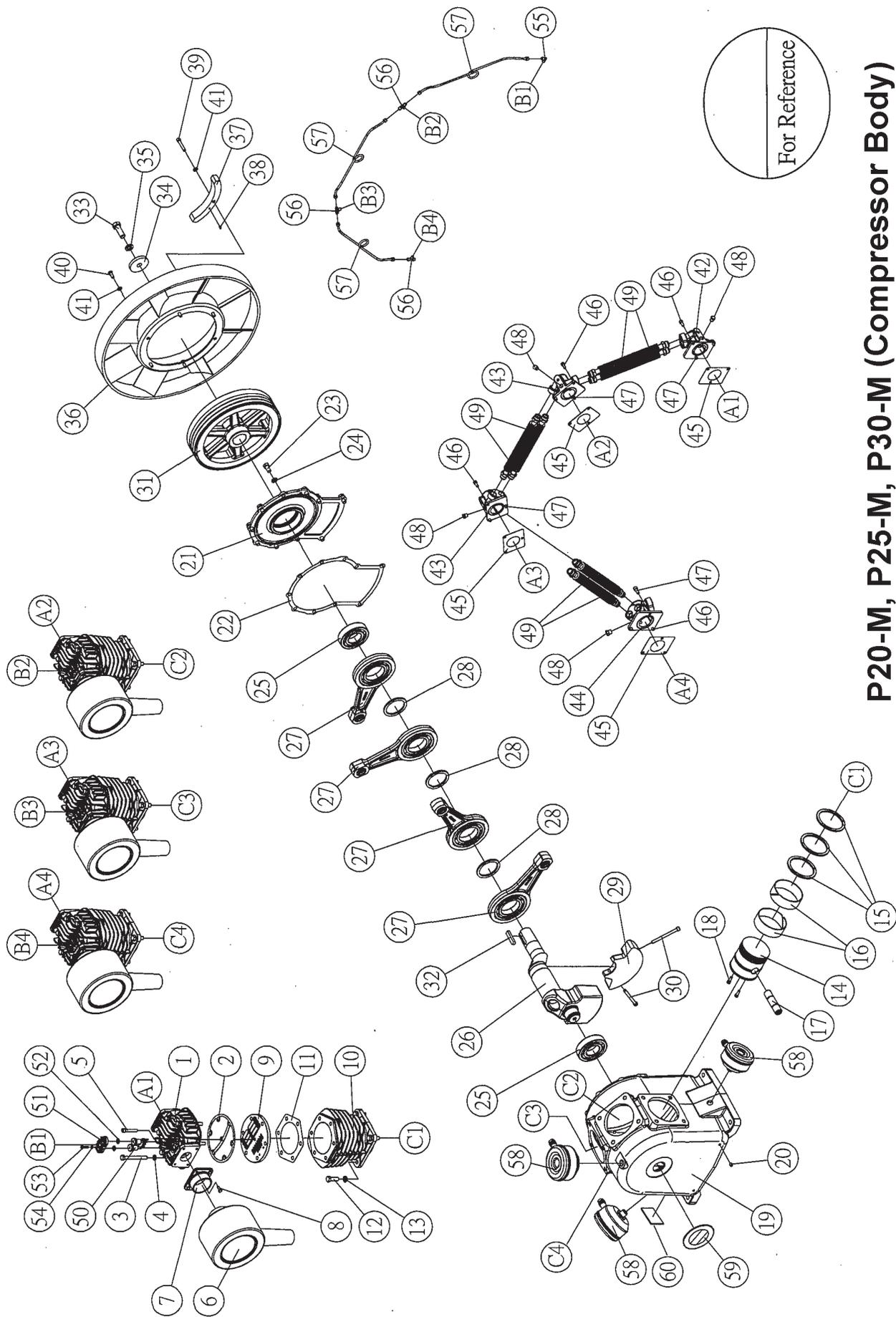


Ⓐ Compression ring

Ⓑ Guide ring

8. Trouble Shooting

Problem		Possible	Action		
			Check	Repair	Replace
On running	Pressure can't be raised properly	Valve assembly broken; or liner leaking		V	V
		Intake filter blocked		V	V
		Pipe leaking		V	V
		Piston ring or cylinder worn		V	V
		V-belt loosen or worn-out	V	V	V
	Abnormal pressure	Fault unloading system		V	V
On running	Unusual sounds	V-belt loosen or worn-out	V	V	V
		Set bolts loosen	V	V	V
		Fault motor		V	V
		Uneven foundation floor	V		
		Defective bearing			V
		Piston hits valve assembly		V	V
		Guide rings worn-out			V
On running	Abnormal vibration	Uneven foundation floor	V		
		V-belt loosen or worn-out	V	V	V
		Set bolts loosen	V	V	
		Abnormal piping	V	V	
On running	Abnormal temperature	Wrong rotation of motor	V		
		High ambient temperature	V		
		V-belt loosen or worn-out		V	V
		Valve assembly broken		V	V
		Compression rings worn-out			V
On running	Overheat motor	Bearing broken			V
		Fault motor		V	V
Unable to start	Motor fail to start	Electrical connection loosen	V	V	
		Motor current protector is tripped	V	V	
		Fault motor		V	V
		Piston bearing burn out		V	V
		Under safety protection activating situation	V		
	Unusual motor sound	Low voltage	V	V	



For Reference

P20-M, P25-M, P30-M (Compressor Body)

Compressor Spare Parts List

NO	Description	Qty
1	Cylinder head	4
2	Head packing	4
3	Set bolt	24
4	Spring washer	24
5	Set bolt	4
6	Filter assembly	4
7	Flange	4
8	Set bolt	16
9	Inlet valve assembly	4
10	Cylinder	4
11	Packing	4
12	Set bolt	16
13	Spring washer	16
14	Piston	4
15	Compression ring	12
16	Guide ring	8
17	Piston pin assembly	4
18	Set bolt	8
19	Crankcase	1
20	Set bolt	2

NO	Description	Qty
21	Rear bearing seat	1
22	O-Ring	1
23	Set bolt	10
24	Spring washer	10
25	Bearing	2
26	Crank shaft	1
27	Connecting rod assembly	4
28	Washer	3
29	Counter weight	1
30	Set bolt	2
31	Flywheel	1
32	Key	1
33	Set bolt	1
34	Washer	1
35	Spring washer	1
36	Fan	1
37	Counter weight	1
38	Spring washer	1
39	Set bolt	1
40	Set Bolt	5

NO	Description	Qty
41	Spring washer	6
42	Flange joint	1
43	Flange joint	2
44	Flange joint	1
45	Packing	4
46	Set bolt	8
47	Set bolt	4
48	Plug	4
49	Discharge copper tube assembly	6
50	Unloading piston assembly	4
51	Unloading holder	4
52	O-Ring	8
53	Set bolt	8
54	Spring washer	8
55	Elbow (unloading)	1
56	Tee joint (unloading)	3
57	Unloading tube assembly	3
58	Filter assembly	3
59	Front cover	1
60	Block nameplate	1

Compressor Spare Parts List

NO	Description	Qty
1	Seat Plate	1
2	Compressor body	1
3	Set bolt	4
4	Spring washer	4
5	Motor pulley	1
6	Set bolt	1
7	Set bolt	1
8	Set bolt	4
9	Spring washer	4
10	Washer	4
11	Set nut	4
12	Set bolt	2
13	Set nut	2
14	Rubber V-belt	3
15	Safety net	1
16	Safety net	1
17	Safety net	1
18	Safety net fixed plate	1
19	Set bolt	10
20	Set bolt	29
21	Washer	39
22	Washer	39
23	Safety net fixed seat	3
24	Safety net fixed plate	1

NO	Description	Qty
25	Safety net fixed plate	1
26	Fixed plate	1
27	Set bolt	18
28	Spring washer	18
29	Washer	18
30	Set bolt	2
31	Spring washer	2
32	Washer	2
33	Discharge Pipe	1
34	Set bolt	2
35	Spring washer	2
36	Cooler assembly	1
37	Cooler assembly	1
38	Cooler assembly	1
39	Set bolt	9
40	Spring washer	9
41	Washer	9
42	Tube fitting	3
43	Elbow	3
44	Discharge copper tube assembly	1
45	Discharge copper tube assembly	1
46	Discharge cooper tube assembly	1
47	Copper tube fixed plate	1

NO	Description	Qty
48	Set bolt	1
49	Washer	1
50	Spring washer	1
51	Discharge copper tube	1
52	Discharge copper tube	1
53	Copper tube nut	4
54	Copper tube sleeve	4
55	Unloading copper tube	1
56	Tube fitting	1
57	Fixed seat	1
58	Set bolt	2
59	Spring washer	2
60	Automatic drain valve	1
61	Plastic joint	1
62	Rubber tube	1
63	Rubber tube	1
64	Rubber tube	1
65	Arrow mark sticker	1
66	Sticker	1
67	Operating manual	1
68	Compressor parts diagram	1
69	Certificate of compliance	1
70	PP adherent bag	1
71	Cotton string	1

10. Replacement Parts

MODEL	P20-M	P25-M	P30-M
Compressor Module w/o Motor	230103	230104	230105
Complete Module Number	100-0225	100-0226	100-0227
Motor HP (60 Hz)	20	25	30
Motor	244285	244286	244287
Temperature Switch (4)	211038	211038	211038
Auto Drain 3/8" NPT	211203	211203	211203
Relief Valve 1/2" 125 PSI	232259	232259	232259
Unloader Solenoid	246029	246029	246029
Vibration Pad (4)	248008	248008	248008

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