



**MODEL 450/650  
NITROGEN INFLATION  
SYSTEMS**

Installation, Operation  
& Repair Parts  
Information



Branick Industries, Inc. • 4245 Main Avenue • Fargo, North Dakota 58103

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## **SAFETY INSTRUCTIONS**

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- NEVER allow unauthorized personnel to operate this product.
- NEVER use this product for anything other than its intended use.
- THOROUGHLY train new employees in the proper use and care of this product.
- PROHIBIT unauthorized personnel from being in shop area while this product is in use.

## **DEFINITIONS**

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- **CAUTION:** Indicates a potentially hazardous situation, which if not avoided, may result in damage to property or minor personal injury.
- **HAZARD:** A source of potential injury to a person.
- **MAINTENANCE:** Those actions that preserve the correct and proper conditions under which the machine shall be used. This may include adjustment, replacement of wear items, lubrication and cleaning, but not modifications or repair of damage.
- **MAY:** This word is understood to be permissive.
- **MUST:** This word is understood to be mandatory.
- **OPERATION:** The correct and proper use of the machine as described in this manual.
- **SAFETY ALERT SYMBOL:** A symbol that indicates a potential personal safety hazard. It is composed of an equilateral triangle surrounding an exclamation point.
- **SHALL:** This word is understood to be mandatory.
- **SHOULD:** This word is understood to be advisory.
- **WARNING:** Indicates a potentially hazardous situation, which if not avoided, may result in death or serious personal injury.

## CAUTION

- ◆ Before using this product, read and fully understand operating instructions and all decals on product. This is necessary to prevent injury to operator and damage to product.
- ◆ Do not attempt to use this product for anything other than its intended purpose.
- ◆ Use of this product should be in a suitably ventilated shop.
- ◆ Operate valves slowly to prevent damage to coalescing filter.
- ◆ Use of this product is only permitted in places free from explosion or fire hazard.
- ◆ Do not use this product if it is visibly worn, distorted or damaged.

### SPECIFICATIONS

Operating Temperature	40° to 140° F (4° to 60° C)
Min/Max Compressed Air Supply	150 to 175 psi (10.3 to 12.0 bar)
Dimensional data	7.5 x 20 x 46.5 in (19 x 51 x 118 cm)
Weight	Model 450      100 lbs (45.36 kgs) Model 650      120 lbs (54.43 kgs)

Specifications shown below are at an air temperature of 75° F (24° C) and a supply air pressure of 160psi (11.0 bar). These specifications are intended to be a baseline to result in the production of 95% pure nitrogen. The output flow of nitrogen has been pre-set to 4.3 scfm (6.9 Nm<sup>3</sup>/hr) per membrane. Changes to air temperature, supply air pressure or supply air flow will change the result of nitrogen purity.

Model #	Supply Air Pressure		Supply Air Flow		Maximum Output N <sub>2</sub> Flow		N <sub>2</sub> Purity
	psi	bar	scfm	Nm <sup>3</sup> /hr	scfm	Nm <sup>3</sup> /hr	
450	160	11.0	8.4	13.5	4.3	6.9	95%*
650	160	11.0	16.8	27	8.6	13.8	95%*

\* These are minimum settings. The purity can be increased by rotating the purity adjustment dial clockwise

Change	Note	Result
When supply air temperature increases	Supply air flow requirement will increase	Nitrogen Purity increases
When supply air pressure increases		
When supply air flow decreases	N <sub>2</sub> output flow will decrease	
When supply air temperature decreases		Nitrogen Purity decreases
When supply air pressure decreases		
Rotating purity adjustment dial clockwise	N <sub>2</sub> output flow will decrease	Increase Purity
Rotating purity adjustment dial ccw	N <sub>2</sub> output flow will increase	Decrease Purity

## **INTENDED USE**

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This Nitrogen Inflation System is a pneumatic device designed to generate deoxygenated air for the purpose of inflating vehicle tires.

## **INSTALLATION INSTRUCTIONS**

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1. Unpack and remove unit from shipping carton and pallet.
2. Inspect unit for any visible damage.
3. Make sure installation location is free from explosion or fire hazard and is suitably ventilated.
4. Make sure plumbing from air compressor to nitrogen generator is made of an appropriately rated copper, steel or aluminum and is at least 30 ft. in length.
5. Install on a solid level wall.
6. Anchor unit to wall with 3/8 anchor bolts (not supplied) utilizing four mounting tab holes on back of unit.
7. Connect air supply line from compressor to air inlet on side of unit.
8. Connect nitrogen supply line to nitrogen outlet on side of unit.
9. Plug cord into standard 110 V outlet.

**NOTE:** The nitrogen generator has a filter system that captures oil, water and other contaminants. However, if your air supply system generates an excessive amount of water, etc., it may be desirable to install an air dryer.

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### **NOTICE:**

**The presence of any oil in the Nitrogen Membrane will void the manufacturer's warranty.**

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## **OPERATING INSTRUCTIONS**

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### **Turning Nitrogen Generator ON**

1. Turn power switch on front of unit, from "OFF" position to "ON" position.
2. If unit is connected to a storage tank, an automatic shut-off valve will stop flow of air to the nitrogen generator when tank pressure reaches 160 psi. The automatic shut-off valve will open again to allow air flow through nitrogen generator when tank pressure drops to 145 psi. *This is done to prevent unnecessary use of air compressor.*
3. To sample purity of nitrogen being produced, use a nitrogen analyzer at sampling port just as you would check a nitrogen filled tire.

**NOTE:** After nitrogen line is pressurized or nitrogen storage tank is filled, vehicle tires can be inflated.

### **Turning Nitrogen Generator OFF**

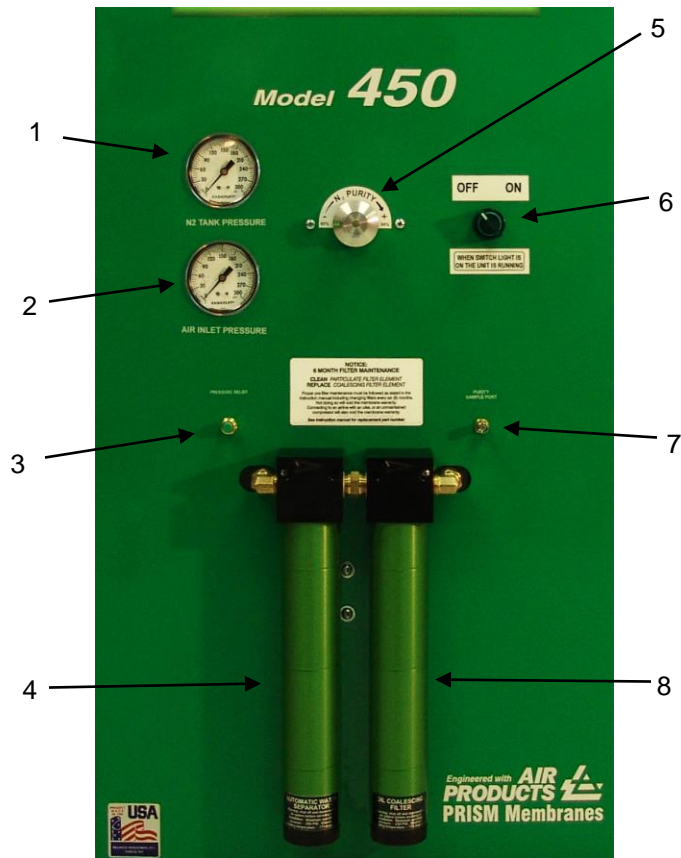
1. Turn power switch on front of unit, from "ON" position to "OFF" position.

### **Purity Adjustment Instructions**

1. Your nitrogen generator is equipped with a purity adjustment dial. Nitrogen purity is set to a minimum of 95%. To increase nitrogen purity, rotate the purity adjustment dial clockwise. Maximum travel of the dial will be approximately 270°.

**NOTE:** Increasing nitrogen purity will decrease nitrogen flow.

## COMPONENT IDENTIFICATION



1	Nitrogen Outlet Pressure	6	Power Switch
2	Air Inlet Pressure	7	Purity Sample Port
3	Pressure Relief Valve	8	Coalescing Filter
4	Particulate Filter	9	Air Inlet Port
5	Purity Adjustment Knob	10	Nitrogen Outlet Port

## **MAINTENANCE**

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**NOTE:** To avoid personal injury or damage to Nitrogen Inflation System, permit only qualified personnel to perform maintenance. **When cleaning or replacing filter elements and automatic float drains, shut off supply air by turning power button on front of unit to “OFF”. Press pressure relief button on front panel to exhaust all trapped air. You can now service the filters.**

See repair parts breakdown for replacement parts.

**ALWAYS: Keep Nitrogen Inflation System clean.**

**DAILY: Check the automatic float drain on all filters for proper operation.**

If automatic float drain should become stuck open or inoperable, shut off air supply (see NOTE above). Before servicing let pressure bleed off from filter. Remove bottom cap from filter. Drain can be cleaned in hot soapy water. DO NOT attempt to disassemble drain. If drain is still inoperable after cleaning, it will have to be replaced. When installing a new drain, make sure o-ring is installed on bottom stem before screwing it into the bottom cap. Finger tighten only.

**WEEKLY: Clean automatic float drain on both filters.**

See above.

**BI-YEARLY: Clean particulate filter element and replace coalescing element.**

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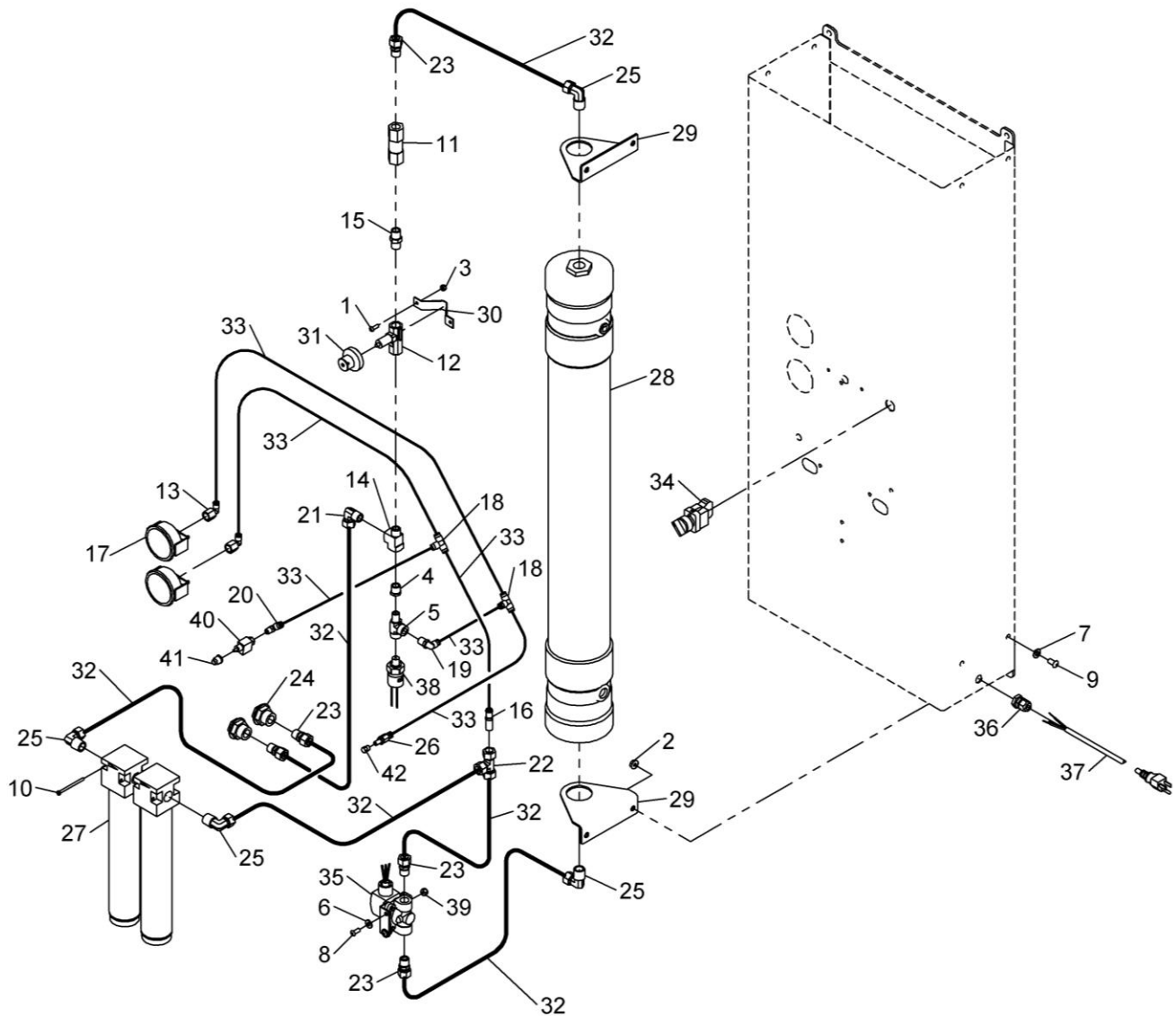
## **OWNER'S RECORDS**

Date Installed: \_\_\_\_\_

Serial number \_\_\_\_\_ *Located on back*

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# MODEL 450 REPAIR PARTS



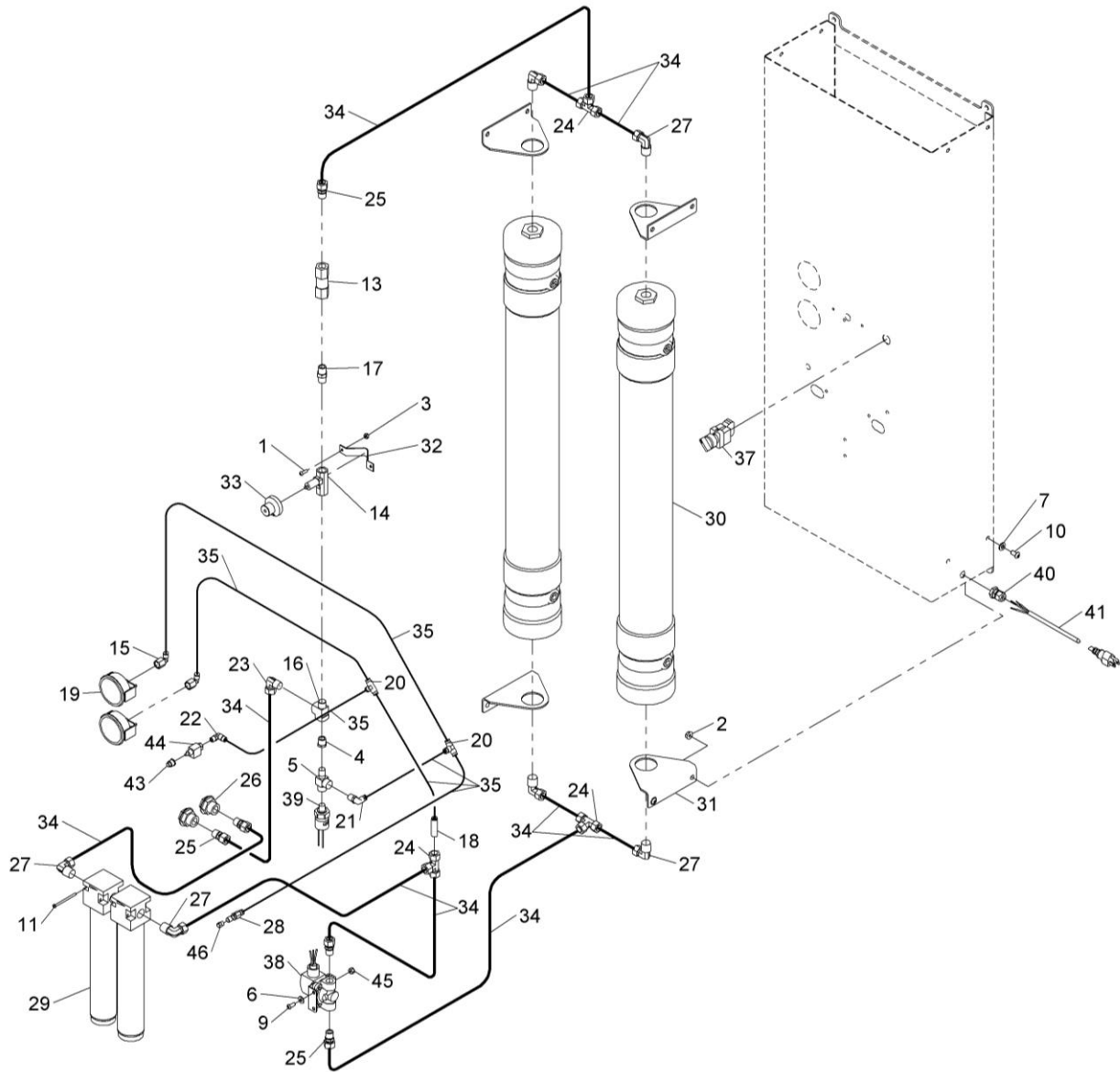
ITEM	QTY	PART NO.	DESCRIPTION
1	2	028-155	#10-24 X 5/8 RD HD SCREW
2	4	055-105	5/16-18 SF HEX LOCK NUT
3	2	055-127	#10-24 NYLOCK NUT
4	1	096-039	3/8-1/4 REDUCER BUSHING
5	1	096-155	1/4 NPT STREET TEE
6	2	108-110	1/4 SAE FLAT WASHER
7	4	108-123	5/16 SAE WASHER
8	2	50-0125	1/4-20 X 5/8 SOC BTN HC SCREW
9	4	50-0126	5/16-18 X 5/8 SOC BTN HC SCREW
10	2	50-0137	#8-32 X 2-1/2" PPHM SCREW



ITEM	QTY	PART NO.	DESCRIPTION
11	1	60-0114	CHECK VALVE
12	1	60-0115	FLOW CONTROL VALVE
13	2	60-0124	1/4 X 1/4 NPT FEMALE ELBOW
14	1	60-0132	3/8 NPT STREET TEE
15	1	60-0134	3/8 NPT HEX NIPPLE
16	1	60-0139	REDUCER
17	2	60-0167	2-1/2" PSI PANEL MOUNT GAUGE
18	2	60-0171	1/4 UNION TEE
19	1	60-0172	1/4 X 1/4 NPT MALE SWIVEL ELBOW
20	1	60-0173	1/4 X 1/8 NPT MALE SWIVEL ELBOW
21	1	60-0175	1/2 X 3/8 NPT MALE ELBOW
22	1	60-0176	1/2 UNION TEE
23	5	60-0177	1/2 X 3/8 NPT MALE CONNECTOR
24	2	60-0178	3/8 NPT X 1-14 STR BULKHEAD COUPLING
25	4	60-0181	1/2 X 1/2 NPT MALE ELBOW
26	1	60-0196	1/4 SCHRADER BULKHEAD VALVE
27	1	64-0016	FILTER ASS'Y
28	1	64-0022	N2 MEMBRANE
29	2	72-0140	MEMBRANE BRACKET
30	1	72-0209	NEEDLE VALVE BRACKET
31	1	73-1100	PURITY ADJUSTMENT DIAL
32		D20-031	1/2 OD (BLACK) TUBE
33		D20-002	1/4 OD (GREEN) TUBE
34	1	64-0017	COALESCING FILTER ELEMENT *
35	1	41-0041	ILLUMINATED SELECTOR SWITCH
36	1	60-0326	SOLENOID VALVE (w/BRACKET)
37	1	40-0083	POWER CORD CABLE GRIP
38	1	42-0026	12 FT POWER CORD
39	1	41-0040	PRESSURE SWITCH (w/HARNESS)
40	2	055-160	1/4-20 NYLON HEX LOCK NUT
41	1	60-0140	SPOOL 2-WAY VALVE
42	1	69-0029	CAPTIVATED PUSH BUTTON
43	1	59-0021	CHROME BRASS VALVE STEM CAP
44	1	64-0021	MESH FILTER ELEMENT *
45	1	69-0020	AUTO FLOAT DRAIN *
46	1	50-0148	#8-32 X 3/8" HSHC SCREW *
47	1	40-0086	TERMINAL STRIP CONNECTOR *

\* Items not shown

# MODEL 650 REPAIR PARTS



ITEM	QTY	PART NO.	DESCRIPTION
1	2	028-155	#10-24 X 5/8 RD HD SCREW
2	8	055-105	5/16-18 SF HEX LOCK NUT
3	2	055-127	#10-24 NYLOCK NUT
4	1	096-039	3/8-1/4 PIPE BUSHING
5	1	096-155	1/4 NPT STREET TEE
6	2	108-110	1/4 SAE FLAT WASHER
7	8	108-123	5/16 SAE WASHER
8	1	108-168	#8 HELICAL LOCK *
9	2	50-0125	1/4-20 X 5/8 SOC BTN HC SCREW
10	8	50-0126	5/16-18 X 5/8 SOC BTN HC SCREW

ITEM	QTY	PART NO.	DESCRIPTION
11	2	50-0137	#8-32 X 2-1/2" PPHM SCREW
12	1	50-0148	#8-32 X 3/8 HSHC SCREW *
13	1	60-0114	CHECK VALVE
14	1	60-0115	FLOW CONTROL VALVE
15	2	60-0124	1/4 X 1/4 NPT FEMALE ELBOW
16	1	60-0132	3/8 NPT STREET TEE
17	1	60-0134	3/8 NPT HEX NIPPLE
18	1	60-0139	REDUCER
19	2	60-0167	2-1/2" PSI PANEL MOUNT GAUGE
20	2	60-0171	1/4 UNION TEE
21	1	60-0172	1/4 X 1/4 NPT MALE SWIVEL ELBOW
22	1	60-0173	1/4 X 1/8 NPT MALE SWIVEL ELBOW
23	1	60-0175	1/2 X 3/8 NPT MALE ELBOW
24	3	60-0176	1/2 UNION TEE
25	5	60-0177	1/2 X 3/8 NPT MALE CONNECTOR
26	2	60-0178	3/8 NPT X 1-14 STR BULKHEAD COUPLING
27	6	60-0181	1/2 X 1/2 NPT MALE ELBOW
28	1	60-0196	1/4 SCHRADER BULKHEAD VALVE
29	1	64-0016	FILTER ASS'Y
30	2	64-0022	N2 MEMBRANE
31	4	72-0140	MEMBRANE BRACKET
32	1	72-0209	NEEDLE VALVE BRACKET
33	1	73-1100	PURITY ADJUSTMENT DIAL
34		D20-031	1/2 OD (BLACK) TUBE
35		D20-002	1/4 OD (GREEN) TUBE
36	1	64-0017	COALESCING FILTER ELEMENT *
37	1	41-0041	ILLUMINATED SELECTOR SWITCH
38	1	60-0326	SOLENOID VALVE (w/BRACKET)
39	1	41-0040	PRESSURE SWITCH (w/HARNESS)
40	1	40-0083	POWER CORD CABLE GRIP
41	1	42-0026	12 FT POWER CORD
42	1	40-0086	TERMINAL STRIP CONNECTOR *
43	1	69-0029	CAPTIVATED PUSH BUTTON
44	1	60-0140	SPOOL 2-WAY VALVE
45	2	055-160	1/4-20 NYLON HEX LOCK NUT
46	1	59-0021	CHROME BRASS VALVE STEM CAP
47	1	64-0021	MESH FILTER ELEMENT *
48	1	69-0020	AUTO FLOAT DRAIN *

\* Items not shown

**Branick Industries, Inc.**  
**Nitrogen Products**  
**COMMERCIAL WARRANTY**  
**(Non-Transferrable)**

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This product is warranted by BRANICK INDUSTRIES, INC. to the original user-owner against defective materials or workmanship. During the warranty period, if Branick determines the product or components to be defective, it will be repaired or replaced (at Branick's option).

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**Warranty Period**

<b>Labor:</b>	12 months from the date of delivery.
<b>Parts:</b>	12 months from the date of delivery.
<b>Nitrogen Membranes:</b>	60 month warranty from the date of delivery. Proper pre-filter maintenance must be followed as stated in this manual including changing filters every six (6) months, and using ONLY filters purchased through Branick. Not doing so will void the five year warranty. Contamination in the membrane including water, oil, solvents, particles, and other contaminants will void the warranty. <b>Connecting to an airline with an oiler, or an unmaintained compressor will void the five year warranty.</b> In order for a membrane to be considered for warranty replacement, it must be returned for inspection.
<b>Service or Repair:</b>	Warranty service or repairs must be performed by a Branick designated service company. Membranes replaced under warranty will remain under warranty for the remaining portion of the original warranty period.

This warranty does not cover damage to the product caused by abuse, misuse, overloading, accident (including shipping damage), improper maintenance, alteration, or any other cause not the result of defective materials or workmanship.

Replacement is the exclusive remedy for defective product under this warranty. This warranty is expressly in lieu of all other warranties, including any implied warranty of merchantability or any implied warranty of fitness for a particular purpose of this product. Branick industries, inc. Shall not be liable for any consequential or incidental damages.

BRANICK INDUSTRIES, INC. reserves the right to make changes in the design or construction of our products without obligation to incorporate such changes in products already sold and without notice.

Service parts, warranty, and regular repair service for **Nitrogen products** are available Monday through Friday, 7:30am to 4:30pm CST.

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