

# PSA Plant Maintenance Tool Kit List: Booster Compressors

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This document was developed by [Build Health International](https://www.bhioxygen.org) to support global medical oxygen infrastructure planning, site preparation, operation, maintenance, and sustainability. Additional technical resources are available at [www.bhioxygen.org](https://www.bhioxygen.org).

## Introduction

An appropriate set of tools and safety equipment are essential for the maintenance and operation of an oxygen plant booster compressor. These tools are required for the hospital technicians and operations staff to effectively and safely perform the required daily maintenance, routine maintenance, basic troubleshooting, and predictable repairs.

This document lists the tools most commonly required to service high pressure booster compressors across different brands that are not included in the kit provided by the supplier / manufacturer. It includes the tool description and photo, recommended quantities, and intended uses for each item. It is meant to complement the general [PSA Plant Maintenance Tool Kit](#); therefore, any tools already included in that general kit that are also suitable for booster compressor work are not repeated here. These tool kits should be used exclusively for the oxygen system and should be kept free of grease and dirt at all times.








*Please note: These tool kits have not been developed or endorsed by any of the mentioned suppliers and are based entirely on Build Health International's experience servicing and assessing this equipment. Additional tools may be required to perform specific service interventions, and all service must be performed in adherence with the manufacturers requirements.*









- 1. Rix Industries and ULTRACECO:** This tool kit list is specific to Rix Industries brand high pressure booster compressors (models 2PS and 2V3B) and ULTRACECO HP models, which is a rebadged Rix 2V3B.
- 2. NOVAIR and Noxerion:** This tool kit list is specific to NOVAIR brand HP series and Noxerion high pressure booster compressors.
- 3. Bailian and ULTRACECO:** This tool kit list is specific to Bailian brand high pressure booster compressors (including GOW-3/4-150, GOW 15/4-150, and other similar models) and ULTRACECO (HPX models).
- 4. Anshan Jiapeng:** This tool kit is specific to Anshan Jiapeng brand high pressure booster compressors.
- 5. Ultra Controllo HPT:** This tool kit is specific to Ultra Controllo HPT brand high pressure booster compressors.
- 6. MIL's High Pressure Booster Compressor Tool Kit:** This tool kit is specific to the MIL's electrical high powered booster compressors.







These tools are required for the plant operator to effectively service and/or troubleshoot their respective booster compressor make and model.

# 1. Rix Industries and ULTRACECO High Pressure Booster Compressor Tool Kit

[Applicable to models 2PS and 2V3B and HP models]

#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
1	3/8 Inch Drive x 1/2 Inch Deep 6-Point Socket	1			Used to tighten or loosen PSA plant equipment fasteners for internal repairs and maintenance
2	Plastic Non Marring Pick with Blunt Tip	1		This tool is typically used for laptop and smartphone repair.	Used to push out the piston, reed valves, or other metal pieces without causing scratches.
3	3/8-Inch Drive Click Torque Wrench (5-80 ft.-lb.)	1			Used to tighten nuts and bolts to a specific intensity. This avoids over or under tightening, and keeps pressure equal.
4	Deep Socket, SAE, 3/8-Inch Drive, 9/16-Inch, 6-Point	1			Used to tighten or loosen PSA plant equipment fasteners for internal repairs and maintenance
5	1/2-inch Combination Wrench, 12 Point, SAE	2			Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
6	5/32" allen key T handle	1		T-handle, not a kit	Used for tightening and loosening hexagonal bolts
7	5/64 allen key T handle	1		T-handle, not a kit	Used for tightening and loosening hexagonal bolts

#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
8	High Precision Stainless Steel Lab Tweezers	1			Used for small precision movements and grabbing while doing maintenance inside of the booster compressor.
9	Pick with 45 Degree Angle Tip and Straight Handle	1		45 degree angle	Used for small precision movements; specifically removing ryder and compression rings.
10	9/16" x 11/16" Open End Wrench	1			Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
11	Wipes	1		Should be lint free.	Used to create a clean oxygen safe working environment. Also to wipe down dirty equipment.
12	Painters tape	1			Used for keeping open ends of piping & hoses protected from debris entering.
13	Synthetic lubricant grease (2 fl oz)	1		Krytox or generic brand with equivalent specifications	Primarily lubricates o-rings; causes them to stay in place and seals from air passing.
14	Nitrile Gloves	1			Personal Protective Equipment (PPE). Protects technicians' hands and keeps Oxygen Cleaned parts & tools oil free.
15	Zippered Tool Bag with pockets	1		Approximately 18in.	Used to hold all tools and keep them organized and accounted for








#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
16	Flat head screwdriver	1		For 2V3B	Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair
17	Phillips head screwdriver	1			Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair
18	7/16" Combination Wrench	1			Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
19	Sandpaper	1		3000 grit	To buffer clean the valves
20	Loctite (medium strength)	1		Medium strength	A medium-strength, medium-viscosity, thixotropic threadlocking adhesive for metal thread sizes up to M36.
21	Isopropyl alcohol (>96%)	1		>96%	Ideal for cleaning, disinfecting internal components of the booster compressor.







**Additional tools required for maintenance that should be provided with the booster compressor by the manufacturer.**







22	Piston adjustment tool	1		#88-A8037. Must be procured from manufacturer	For setting the piston height
23	Sleeve Tool, 2rd Stage, 2V3B	1		#X63-C1148-5. Must be procured from manufacturer	
24	Sleeve Tool, 3nd Stage, 2V3B	1		#X63-A10773. Must be procured from manufacturer	
25	Sleeve Tool, 2nd stage, 2PS	1		#X63-A5549. Must be procured from manufacturer	

## 2. NOVAIR and Noxerior High Pressure Booster Compressor Tool Kit

[Applicable to all models in the HP series and Noxerior models]








#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
1	Combination wrench, 10 mm	1		metric	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
2	Combination wrench, 14 mm	1		metric	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
3	Combination wrench, 17 mm	1		metric	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
4	Combination wrench, 19 mm	1		metric	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
5	SAE/Metric Folding Hex Key Set (3-Piece)	1		metric and SAE	Used to turn bolts or screws with hexagonal sockets to access PSA plant equipment for internal maintenance or repair. Also known as "Hex keys"
6	Plastic Non Marring Pick with Blunt Tip	1			Used to push out the piston, reed valves, or other metal pieces without causing scratches.
7	3/8-Inch Drive Click Torque Wrench (5-80 ft.-lb.)	1			Used to tighten nuts and bolts to a specific intensity. This avoids over or under tightening, and keeps pressure equal.









#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
8	Thread locking paste	1		Weicon lock AN 302-60 or alternative with equivalent properties: nonflammable and temperature limit of 150C or higher / Loctite medium strength	An adhesive, applied to the threads of fasteners such as screws and bolts to prevent loosening, leakage, and corrosion.
9	Sandpaper	1		3000 grit	To buffer clean the valves
10	Wipes	1		Lint free	Used to create a clean oxygen safe working environment. Also to wipe down dirty equipment.
11	Zippered Tool Bag with pockets	1		Approximately 14in.	Used to hold all tools and keep them organized and accounted for
12	Pick With 90 Degree Angle Tip And Straight Handle	1		90 deg angle	Used for small precision movements; specifically removing ryder and compression rings.
13	Threaded Hex bolt, M4, 40 mm long	1		m4 threaded hex bolt	For extracting valve assemblies for stage 2 during service




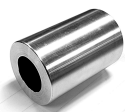




#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
14	Retracting-Blade Utility Knife	1			Used for opening spare parts packages.
15	12-Point Socket Deep, Chrome Plated, 3/8" Square Drive, 17mm Size	1			Used to tighten or loosen nuts and bolts on the booster compressor
16	Isopropyl alcohol (>96%)	1		>96%	Ideal for cleaning, disinfecting internal components of the booster compressor.
17	Synthetic Lubricant Grease (2 Fl Oz)	1		Krytox or generic brand with equivalent specifications	Primarily lubricates o-rings; causes them to stay in place and seals from air passing.
Additional tools required for maintenance that should be provided with the booster compressor by the manufacturer.					
#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
18	Insertion tool HP45	1		Must be procured from manufacturer	Used to help insert piston back into sleeve and to place compression rings back onto piston.
19	Centralizing bolt HP45	1		Must be procured from manufacturer	To ensure piston and piston housing alignment.

### 3. Bailian and ULTRACECO High Pressure Booster Compressor Tool Kit

[Applicable to models GOW-3/4-150, GOW 15/4-150 and similar and HPX models]









#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
1	Combination wrench, 10 mm	1		10 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
2	Combination wrench, 14 mm	1		14 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
3	Combination wrench, 16 mm	1		16 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
4	Combination wrench, 18 mm	1		18 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
5	Combination wrench, 19 mm	1		19 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
6	12" Chrome-Plated Adjustable Wrench	1			Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
7	Phillips head screwdriver	1			Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair








#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
8	Flat head screwdriver	1			Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair
9	Ball-End Hex L-Key, 6 mm Size	1			Used to turn bolts or screws with hexagonal sockets to access PSA plant equipment for internal maintenance or repair. Also known as "Hex keys"
10	Synthetic lubricant grease (2 fl oz)	1		Krytox or generic brand with equivalent specifications	Primarily lubricates o-rings; causes them to stay in place and seals from air passing.
11	High Precision Stainless Steel Lab Tweezers	1			Used for small precision movements and grabbing while doing maintenance inside of the booster compressor.
12	Pick With 45 Degree Angle Tip And Straight Handle	1		45 degree angle	Used for small precision movements; specifically removing ryder and compression rings.
13	Sandpaper	1		3000 grit	To buffer clean the valves
14	Nitrile gloves	1			Personal Protective Equipment (PPE). Protects technicians' hands and keeps Oxygen Cleaned parts & tools oil free.
15	Wipes	1		Lint free	Used to create a clean oxygen safe working environment. Also to wipe down dirty equipment.





#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
16	Zippered Tool Bag with pockets	1		Approximately 12in.	Used to hold all tools and keep them organized and accounted for
17	Tight-Clearance Offset Socket, 3/8" Square Drive, 18 mm	1			Used to tighten and loosen nuts that are difficult to access with a standard wrench
18	Wobble Socket Extension with 3/8" Square Drive	1			Used to tighten and loosen nuts that are difficult to access with a standard wrench
19	4th piston ring install tool	1			Used to help insert the final stage piston back into the sleeve and to place compression rings back onto the piston.
20	piston rod protective sleeve tool	1			Protects piston rod and compression / rider rings from being damaged during insertion
21	Fine-Thread Alloy Steel Socket Head Screw, M6 x 0.75 mm Thread, 16 mm Long	1			Used to remove the 4th stage piston from it's housing
22	Loctite (medium strength)	1		Medium strength	A medium-strength, medium-viscosity, thixotropic threadlocking adhesive for metal thread sizes up to M36.
23	Isopropyl alcohol (>96%)	1		>96%	Ideal for cleaning, disinfecting internal components of the booster compressor.

## 4. Anshan Jiapeng High Pressure Booster Compressor Tool Kit

[Applicable to Anshan Jiapeng models]








#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
1	Combination Wrench, 8 mm	1		8 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
2	Combination Wrench, 10 mm	1		10 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
3	Combination Wrench, 17 mm	1		17 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
4	Combination Wrench, 18 mm	1		18 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
5	Combination Wrench, 30 mm	1		30 mm	Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
6	12" Chrome-Plated Adjustable Wrench	1			Used to turn or loosen nuts and bolts for access to PSA Plant equipment for internal maintenance or repair
7	Phillips Head Screwdriver	1			Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair
8	Flat Head Screwdriver	1			Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair







#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
9	Hex L-Key, 5 mm Size	1			Used to turn bolts or screws with hexagonal sockets to access PSA plant equipment for internal maintenance or repair. Also known as "Hex keys"
10	Hex L-Key, 8 mm Size	1			Used to turn bolts or screws with hexagonal sockets to access PSA plant equipment for internal maintenance or repair. Also known as "Hex keys"
11	Synthetic Lubricant Grease (2 Fl Oz)	1		Krytox or generic brand with equivalent specifications	Primarily lubricates o-rings; causes them to stay in place and seals from air passing.
12	Pick with 45 Degree Angle Tip	1		45 degree angle	Used for small precision movements; specifically removing ryder and compression rings.
13	Nitrile Gloves	1			Personal Protective Equipment (PPE). Protects technicians' hands and keeps Oxygen Cleaned parts & tools oil free.
14	Wipes	1		Lint free	Used to create a clean oxygen safe working environment. Also to wipe down dirty equipment.
15	15 in. Tool Bag with 14 Pockets	1		Approximately 15in.	Used to hold all tools and keep them organized and accounted for




16	Loctite (medium strength)	1		Medium strength	A medium-strength, medium-viscosity, thixotropic threadlocking adhesive for metal thread sizes up to M36.
17	Isopropyl alcohol (>96%)	1		>96%	Ideal for cleaning, disinfecting internal components of the booster compressor.
18	Synthetic Lubricant Grease (2 Fl Oz)	1		Krytox or generic brand with equivalent specifications	Primarily lubricates o-rings; causes them to stay in place and seals from air passing.
19	Sandpaper	1		3000 grit	To buffer clean the valves

## 5. Ultra Controlo HPT High Pressure Booster Compressor Tool Kit

[Applicable to Ultra Controlo models]








No.	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
1	15" Contractor Tool Bag	1		Approx. 15 in	Used to hold all tools and keep them organized and accounted for
2	8 in. Long Nose Pliers	1			Used for reaching into narrow or confined spaces where fingers or standard pliers cannot.
3	Diamond Tip Screwdrivers (6-Piece)	1			Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair
4	3/8 in. Drive Deep Metric Socket Set (10-Piece)	1			Used to tighten and loosen nuts
5	Metric Combination Wrench Set (6 Piece)	1			Used to tighten and loosen nuts
6	Metric Hex L-Key Set (9 Piece)	1		metric and SAE	Used to turn bolts or screws with hexagonal sockets essential for disassembly and internal maintenance or repair. Also known as "Hex keys/Allen keys"
7	Nitrile Gloves	1			Personal Protective Equipment (PPE). Protects technicians' hands and keeps Oxygen Cleaned parts & tools oil free.









No.	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
8	Wipes	1		Should be lint free.	Used to create a clean oxygen safe working environment. Also to wipe down dirty equipment.
9	Plastic Non Marring Pick With Blunt Tip	1		This tool is typically used for laptop and smartphone repair.	Used to push out the piston, reed valves, or other metal pieces without causing scratches.
10	High Precision Stainless Steel Lab Tweezers	1			Used for small precision movements and grabbing while doing maintenance inside of the booster compressor.
11	Pick With 45 Degree Angle Tip And Straight Handle	1		45 degree angle	Used for small precision movements; specifically removing ryder and compression rings.
12	Painters tape	1			Used for keeping open ends of piping & hoses protected from debris entering.
13	Loctite (medium strength)	1		Medium strength	A medium-strength, medium-viscosity, thixotropic threadlocking adhesive for metal thread sizes up to M36.



#	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
14	Isopropyl alcohol (>96%)	1		>96%	Ideal for cleaning, disinfecting internal components of the booster compressor.
15	Synthetic Lubricant Grease (2 Fl Oz)	1		Krytox or generic brand with equivalent specifications	Primarily lubricates o-rings; causes them to stay in place and seals from air passing.
16	Sandpaper	1		3000 grit	To buffer clean the valves

## 6. MIL's Electrical High Powered Booster Compressor Tool Kit

[Applicable to MIL's models]

No.	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
1	15" Contractor Tool Bag	1		Approx. 15 in	Used to hold all tools and keep them organized and accounted for
2	8 in. Long Nose Pliers	1			Used for reaching into narrow or confined spaces where fingers or standard pliers cannot.
3	Diamond Tip Screwdrivers (6-Piece)	1			Used to insert or remove screws to access PSA Plant equipment for internal maintenance or repair
4	3/8 in. Drive Deep Metric Socket Set (10-Piece)	1			Used to tighten and loosen nuts
5	Metric Combination Wrench Set (6 Piece)	1			Used to tighten and loosen nuts
6	Metric Hex L-Key Set (9 Piece)	1		metric and SAE	Used to turn bolts or screws with hexagonal sockets essential for disassembly and internal maintenance or repair. Also known as "Hex keys/Allen keys"
7	Nitrile Gloves	1			Personal Protective Equipment (PPE). Protects technicians' hands and keeps Oxygen Cleaned parts & tools oil free.

No.	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
8	Wipes	1		Lint free	Used to create a clean oxygen safe working environment. Also to wipe down dirty equipment.
9	Plastic Non Marring Pick With Blunt Tip	1		This tool is typically used for laptop and smartphone repair.	Used to push out the piston, reed valves, or other metal pieces without causing scratches.
10	High Precision Stainless Steel Lab Tweezers	1			Used for small precision movements and grabbing while doing maintenance inside of the booster compressor.
11	Pick With 45 Degree Angle Tip And Straight Handle	1		45 degree angle	Used for small precision movements; specifically removing ryder and compression rings.
12	Painters tape	1			Used for keeping open ends of piping & hoses protected from debris entering.
13	Retracting-Blade Utility Knife	1			Used for opening spare parts packages.
14	Loctite (medium strength)	1		Medium strength	A medium-strength, medium-viscosity, thixotropic threadlocking adhesive for metal thread sizes up to M36.
15	Isopropyl alcohol (>96%)	1		>96%	Ideal for cleaning, disinfecting internal components of the booster compressor.

No.	Item Description	Qty	Photo	Requirements / Alternatives	Tool Purpose
16	Synthetic Lubricant Grease (2 Fl Oz)	1		Krytox or generic brand with equivalent specifications	Primarily lubricates o-rings; causes them to stay in place and seals from air passing.
17	Sandpaper	1		3000 grit	To buffer clean the valves