⚠ WARNING

PLEASE READ THE ENTIRE CONTENTS OF THIS MANUAL PRIOR TO INSTALLATION AND OPERATION. BY PROCEEDING YOU AGREE THAT YOU FULLY UNDERSTAND AND COMPREHEND THE FULL CONTENTS OF THIS MANUAL. FORWARD THIS MANUAL TO ALL OPERATORS. FAILURE TO OPERATE THIS EQUIPMENT AS DIRECTED CAN MAY CAUSE INJURY OR DEATH.

Rev. A - 5900087
Released March 2019

INSTALLATION AND OPERATION MANUAL

Model R80EX
Tire Changer

FOR SERVICING
AUTOMOBILE
AND LIGHT TRUCK
SINGLE PIECE
TIRES/WHEELS

Keep this operation manual near the machine at all times. Make sure that ALL USERS read this manual.

SHIPPING DAMAGE CLAIMS

When this equipment is shipped, title passes to the purchaser upon receipt from the carrier. Consequently, claims for the material damaged in shipment must be made by the purchaser against the transportation company at the time shipment is received.

BE SAFE

Your new Ranger tire changer was designed and built with safety in mind. However, your overall safety can be increased by proper training and thoughtful operation on the part of the operator. DO NOT operate or repair this equipment without reading this manual and the important safety instructions shown inside.

Ranger™ PRODUCTS

1645 Lemonwood Dr.
Santa Paula, CA. 93060, USA
Toll Free: 1-800-253-2363
Tel: 1-805-933-9970
www.rangerproducts.com

This instruction manual has been prepared especially for you.
Your new tire changer is the result of over 25 years of continuous research, testing and development and is the most technically advanced tire changer on the market today.
The manner in which you care for and maintain your tire changer will have a direct effect on it's overall performance and longevity.

READ THIS ENTIRE MANUAL BEFORE OPERATION BEGINS

RECORD HERE THE FOLLOWING INFORMATION
WHICH IS LOCATED ON THE SERIAL NUMBER DATA PLATE.

Serial No. _____

Model No. _____

Manufacturing date _____

PRODUCT WARRANTY

Your new tire changer is covered under warranty for one year on equipment structure; one year on all operating components and tooling/accessories, to the original purchaser, to be free of defects in material and workmanship. The manufacturer shall repair or replace at their option for this period those parts returned to the factory freight prepaid which prove upon inspection to be defective. The manufacturer will pay labor costs for the first 12 months only on parts returned as previously described.

The warranty does not extend to:

- ♦ defects caused by ordinary wear, abuse, misuse, shipping damage, improper installation, voltage or lack of required maintenance;
- ♦ damages resulting from purchaser's neglect or failure to operate products in accordance with instructions provided in the owner's manual(s) and/or other accompanying instructions supplied;
- ♦ normal wear items or service normally required to maintain the product in a safe operating condition;
- ♦ any component damaged in shipment;
- ♦ other items not listed but may be considered general wear parts;
- ♦ damage caused by rain, excessive humidity, corrosive environments or other contaminants.

THESE WARRANTIES DO NOT EXTEND TO ANY COSMETIC DEFECT NOT INTERFERING WITH EQUIPMENT FUNCTIONALITY OR ANY INCIDENTAL, INDIRECT, OR CONSEQUENTIAL LOSS, DAMAGE, OR EXPENSE THAT MAY RESULT FROM ANY DEFECT, FAILURE, OR MALFUNCTION OF A BENDPAK / RANGER PRODUCT OR THE BREACH OR DELAY IN PERFORMANCE OF THE WARRANTY.

TABLE OF CONTENTS

⚠ WARNING

Failure to follow danger, warning, and caution instructions may lead to serious personal injury or death to operator or bystander or damage to property.

Do not operate this machine until you read and understand all the dangers, warnings and cautions in this manual.

For additional copies
or further information, contact:

BendPak Inc. / Ranger Products
1645 Lemonwood Dr.,
Santa Paula, CA. 93060
1-805-933-9970
www.bendpak.com
www.rangerproducts.com

⚠ CAUTION

OPERATOR PROTECTIVE EQUIPMENT

Personal protective equipment helps make tire changing safer. However, equipment does not take the place of safe operating practices. Always wear durable work clothing during tire service activity. Shop aprons or shop coats may also be worn, however loose fitting clothing should be avoided. Tight fitting leather gloves are recommended to protect operators hands when handling worn tires and wheels. Sturdy leather work shoes with steel toes and oil resistant soles should be used by tire service personnel to help prevent injury in typical shop activities.

Eye protection is essential during tire service activity. Safety glasses with side shields, goggles, or face shields are acceptable. Back belts provide support during lifting activities and are also helpful in providing operator protection. Consideration should also be given to the use of hearing protection if tire service activity is performed in an enclosed area, or if noise levels are high.

THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH IF NOT FOLLOWED COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS AND CAN CAUSE PERSONAL INJURY OR DEATH. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE THIS MACHINE.

SECTION 1
DEFINITIONS OF HAZARD LEVELS

Identify the hazard levels used in this manual with the following definitions and signal words:

DANGER

Watch for this symbol: It Means: Immediate hazards which will result in severe personal injury or death.

WARNING

Watch for this symbol: It Means: Hazards or unsafe practices which could result in severe personal injury or death.

CAUTION

Watch for this symbol: It Means: Hazards or unsafe practices which may result in minor personal injury or product or property damage.

Watch for this symbol! It means BE ALERT! Your safety, or the safety of others, is involved!

OWNER'S RESPONSIBILITY

To maintain machine and user safety, the responsibility of the owner is to read and follow these instructions:

- Follow all installation instructions.
- Make sure installation conforms to all applicable Local, State, and Federal Codes, Rules, and Regulations; such as State and Federal OSHA Regulations and Electrical Codes.
- Carefully check the unit for correct initial function.
- Read and follow the safety instructions. Keep them readily available for machine operators.
- Make certain all operators are properly trained, know how to safely and correctly operate the unit, and are properly supervised.
- Allow unit operation only with all parts in place and operating safely.
- Carefully inspect the unit on a regular basis and perform all maintenance as required.
- Service and maintain the unit only with authorized or approved replacement parts.
- Keep all instructions permanently with the unit and all decal's on the unit clean and visible.

WARNING

Do not attempt to operate this equipment if you have never been trained on basic tire service and mounting / dismounting procedures.

SECTION 2

IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING

Read these safety instructions entirely

1. **READ AND UNDERSTAND** all safety warning procedures before operating equipment.

2. **KEEP HAND AND FEET CLEAR** Remove hands and feet from any moving parts.

3. **KEEP WORK AREA CLEAN**. Cluttered work areas invite injuries.

4. Consider work area environment. Do not expose equipment to rain. **DO NOT** use in damp or wet locations. Keep area well lighted.

5. **ONLY TRAINED OPERATORS** should operate this equipment. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate machine.

6. **USE MACHINE CORRECTLY**. Use machine in the proper manner. Never use adapters other than what is approved by the manufacturer.

7. **DO NOT** override or disable safety valves and/or devices.

8. **ALWAYS INSURE** that the safety protocol is followed before any attempt is made to work on or near vehicle.

9. **DRESS PROPERLY**. Non-skid steel-toe footwear is recommended when operating machine.

10. **GUARD AGAINST ELECTRIC SHOCK**. This equipment must be grounded while in use to protect the operator from electric shock. Never connect the green power cord wire to a live terminal. This is for ground only.

11. **DANGER** The motor on this machine contains high voltage. Disconnect power at the receptacle before performing any electrical repairs. Secure plug so that it cannot be accidentally plugged in during service.

12. **WARNING RISK OF EXPLOSION**. This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. This machine should not be located in a recessed area or below floor level.

13. **MAINTAIN WITH CARE**. Keep unit clean for better and safe performance. Follow manual for proper lubrication and maintenance instructions. Keep control pedals and/or buttons dry, clean and free from grease and oil.

14. **STAY ALERT**. Watch what you are doing. Use common sense. Be aware.

15. **CHECK FOR DAMAGED PARTS**. Check for condition of all moving parts, breakage of parts or any condition that may affect the machines operation. Do not use if any component is broken or damaged.

16. **NEVER** remove safety related components or device from the machine. Do not use if safety related components are damaged or missing.

17. To reduce fire hazard, keep engine/ motor exterior free of oil, solvent, or excessive grease.

18. Unreadable and missing warning labels must be replaced immediately. Do not use the tire changer if one or more labels are missing. Do not add any object that could prevent the operator from seeing the labels.

SECTION 3

TIRE AND WHEEL SERVICE SAFETY INSTRUCTIONS

⚠ DANGER

Only properly trained personnel should service tires and wheels using the tire changer. Read all safety and operating instructions thoroughly before use. The following safety instructions are for one piece wheels only. Always refer to the manufacturer's procedures for multi-piece wheels.

ALWAYS wear durable personal protective work clothing and safety gear during tire service activity. Refer to page three for Operator Protective Equipment.

ALWAYS remove all wheel weights and the valve core to deflate the tire before servicing.

ALWAYS keep all working surfaces clean and free of debris.

ALWAYS be aware of what each person is doing and what they will do before attempting any two-person operation.

ALWAYS cover the electric motor and switch box before cleaning the tire changer. Be sure water does not enter the motor or switch box.

ALWAYS disconnect the electric power and air supply before attempting any maintenance.

Bead Loosening

NEVER place anything between the bead loosener disc and the tire/wheel.

NEVER allow the bead loosener disc to contact the wheel or wheel damage may occur.

NEVER place any part of your body between the bead loosener disc and the tire/wheel; severe injury may result.

Demounting & Mounting

ALWAYS clean and inspect the wheel prior to any service.

NEVER stand on the sliding carriage, frame or work table while demounting or mounting a tire.

ALWAYS keep hands, feet, and other objects away from moving parts while the machine is turned on.

ALWAYS place the narrow bead seat to the outside when clamping. Failure to demount the tire from the narrow bead seat side may cause damage to the tire beads.

ALWAYS apply an approved rubber lubricant to rim flanges and both tire beads before demounting or mounting and seating the beads.

NEVER mount a tire on a damaged or rusty wheel as tire or wheel failure may result during inflation. Explosion from failure may result in severe injury or death of the operator and bystanders.

ALWAYS be sure the bead opposite the tool is in the drop center before rotating the tire when demounting or mounting to avoid damage to the tire beads.

Inflation

ALWAYS follow all applicable Local, State, and Federal Codes, Rules, and Regulations; such as the Federal OSHA Standard Number 1910.177.

ALWAYS use an approved inflation chamber or inflation cage equipped with a self-gripping chuck and remote inflation gauge and valve.

ALWAYS inflate the tire to manufacturer's recommended cold operating pressure.

DO NOT OVER INFLATE! Tire or wheel failure during and after inflation may result in an explosion capable of causing severe injury or death.

NEVER reinflate a tire that has been run under inflated or flat without first demounting the tire and checking for wheel and tire damage.

ALWAYS inspect the tire interior for loose or broken cords, cuts, penetrating objects, and other damage. Discard tires that cannot be properly repaired.

NEVER rework, weld, heat or braze wheels.

NEVER strike the tire or wheel with a hammer.

ALWAYS be sure the tire diameter exactly matches the wheel diameter.

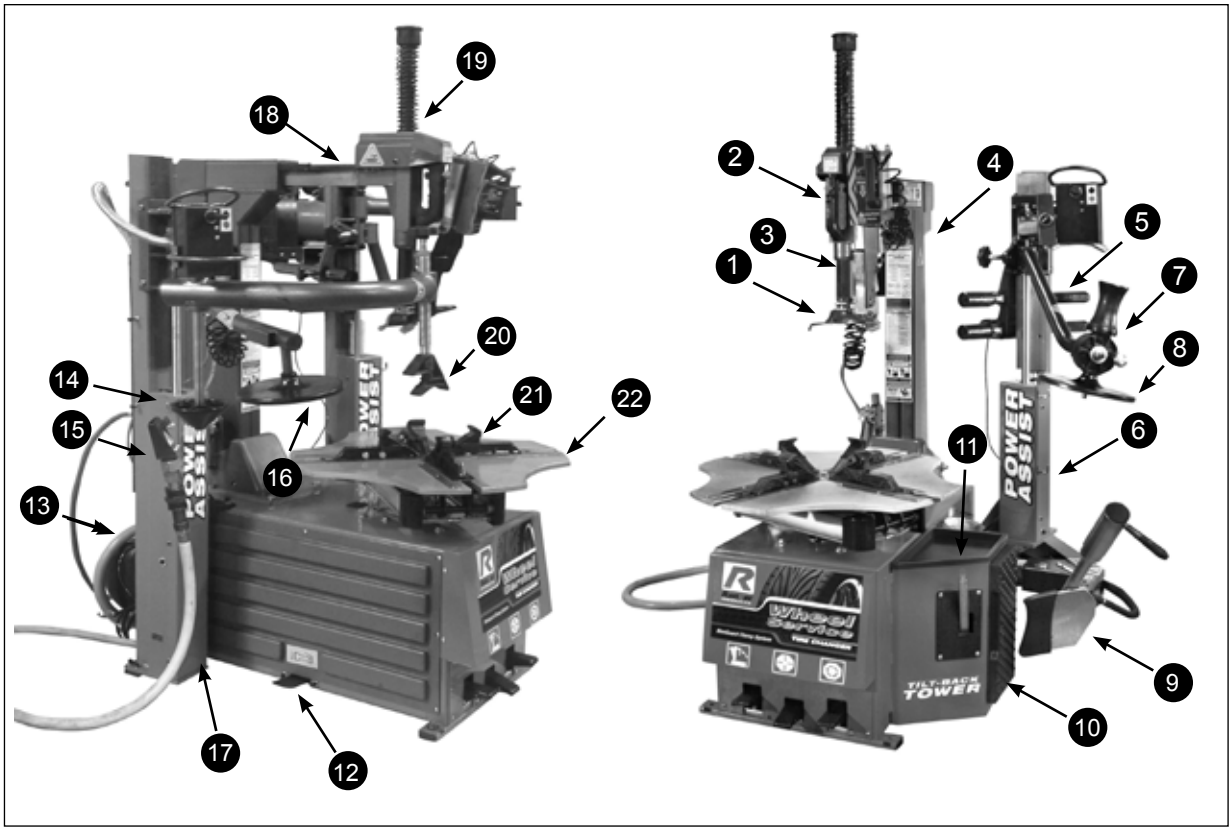
⚠ DANGER

Tire failure under pressure can be hazardous. When possible, always place wheels inside an approved inflation chamber or cage before inflating. Use an approved remote inflation valve, hose, and gauge.

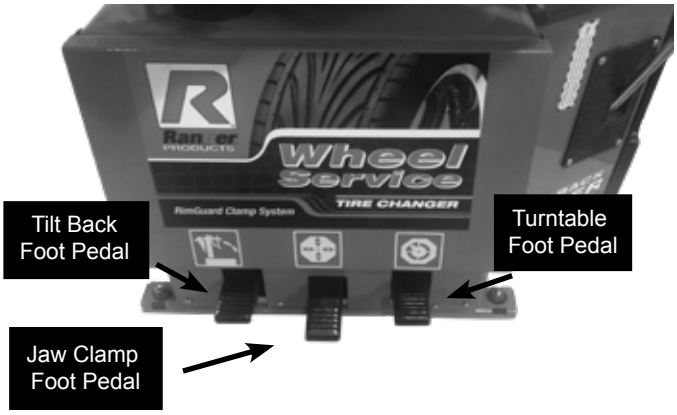
AIways wear safety goggles for eye protection. Do not stand beside the wheel or cage during inflation. Keep hands and other parts of the body out of the cage during inflation. Observe the tire pressure frequently.

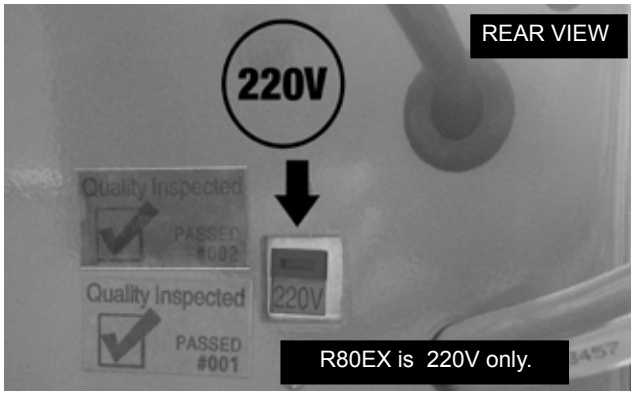
Do not exceed the manufacturer's recommended maimum inflation pressure. Failure to follow these instructions may cause the tire and rim to separate with tremendous force, resulting in serious personal injury or death.

SECTION 4



1 Combination Mount Demount Head
2 Vertical / Horizontal Slide Lock
3 Air Inflation Gauge
4 Tilt Back Tower
5 Bead Roller Arm
6 Right Assist Tower
7 Right Helper Disc / Bead Roller Control
8 Right Helper Disc
9 Bead Breaker Blade
10 Rim Protection Pad
11 Tool Bar / Storage
12 Inflation Pedal
13 Air Tank
14 Left Helper Restraint Cone
15 Turbo Blast Nozzle / Hose
16 Left Helper Disc
17 Left Assist Tower
18 Horizontal Slide
19 Vertical Slide
20 Left Helper / Bead Tool Control
21 Turntable Clamps
22 Turntable





Note: The parts, photos, and procedures in this manual may include optional equipment that may not be included on the tire changer model you are using.

R80EX FEATURES / SPECIFICATIONS:

Type of Drive System	Electric / Air
Motor	2 HP, 208-230 VAC, 50-60 HZ, 1 Phase
Air Requirement	110-175 PSI (8-12 BAR)
Automatic Bead Lifting Tool	Standard
Variable Speed Control	Standard
Table Clamping System	Dual Pneumatic Cylinders
Wheel Clamping Method	4 Wheel Clamps - Internal / External
Adjustable RimGuard™ Wheel Clamps	Standard
Bead Loosener System	Pneumatic Blade
Bi-lateral Power Controlled Bead Loosener	Standard
Bead Loosener Control	Single-Lever Control on Shovel Handle
Power Assist Towers	Dual
Power Assist Towers	Dual / Left & Right
Upper Bead Assist Roller	Standard / Dual Power-Drop
Traveling Drop-Center Hold Down Device	Standard
Wheel Centering Tool / Inflation Restraint Device	Standard
"Turbo-Blast" Bead Seating System	Standard
Tool Tray / Bin Storage	Standard
Inflation Gauge With Integrated Air Dump Valve	Standard
Inflation Pressure Regulator/Limiter	Standard
Water Filter / Oiler / Lubricator	Standard
Oiler / Lubricator	Standard
Air Regulator	Standard
Tire Iron / Bead Lever Tool	Standard
Large Soap / Lubricator Bucket	Standard
Brush	Standard
Tower Design	Tilt-Back
Motorcycle Turntable Clamps	Optional
Internal Rim Clamping Capacity	13” – 34” (305 mm - 864 mm)
External Rim Clamping Capacity	10” – 30” (254 mm - 762 mm)
Turntable Tire Width Capacity (Mounting)	5” – 20” (127 mm – 508 mm)
Bead Breaker Tire Width Capacity (Demounting)	3” – 15” (76 mm – 381 mm)
Maximum Tire Diameter	47” (1,194 mm)
Shipping Weight	1,256 lbs. (570 Kg)
* Note: Internal and External Wheel clamping dimensions do not translate directly to rim or tire sizes as Wheel clamping points may vary by manufacturer. Specifications are subject to change without notice.	

Required Tools

1. Pallet jack or forklift for moving crate.
2. Shop crane.
3 Utility knife.
4. Crow bar or pry bar.
5. Tin Snips or Sheet Metal Snips
6. Hammer.
7. Open end metric wrenches and/or socket set.
8. Phillips and Slot head screw drivers.
9. Metric Allen Key set.

Required Parts (not supplied)

1. Thread seal tape
2. Air fitting to match shop Air Supply line
3. Tool Oil
4. Anchor Bolts and Shims (if Anchoring)

SECTION 6
LIFTING/ UNCRATING

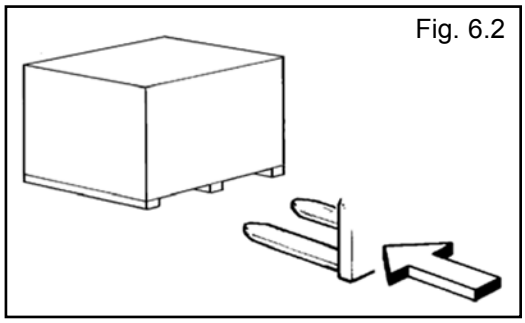
1. The tire changer is shipped on a pallet. (See Fig 6.1)

Fig. 6.1

CAUTION

Handling of the machine must be performed only with an appropriate lifting device such as a forklift or pallet jack. Only personnel who are experienced and qualified on material handling procedures should handle any transportation or moving of machine.

Fig. 6.2



CAUTION

Be careful when cutting steel banding material as items may become loose and fall causing personal harm or injury. Always wear gloves when uncrating the machine to prevent scratches, abrasions, or cuts due to the contact with packing materials. Eye protection is essential during uncrating service activity. Safety glasses with side shields, goggles, or face shields are acceptable.
Remember to report any shipping damage to the carrier and make a notation on the delivery receipt.

Uncrating Instructions

1. Carefully cut the metal strapping and remove.

2. Using a crow bar or pry bar, locate the staple/nail/tab locations and pry off the bottom part the box. Note: the entire box can be lifted off after prying the staples/nails/tabs at the base of the carton. (See Fig 6.3)

Fig. 6.3

CAUTION

Secure the Bead Breaker Arm prior to removing all the plastic wrapping/strapping as the Bead Breaker Arm may have shifted during shipping.

3. Cut and remove the plastic wrapping. (See Fig 6.4)

Fig. 6.4

4. Remove the front and rear Bolts and Nuts holding the tire changer from the pallet. (See Figs. 6.5 - 6.6)

Fig. 6.5

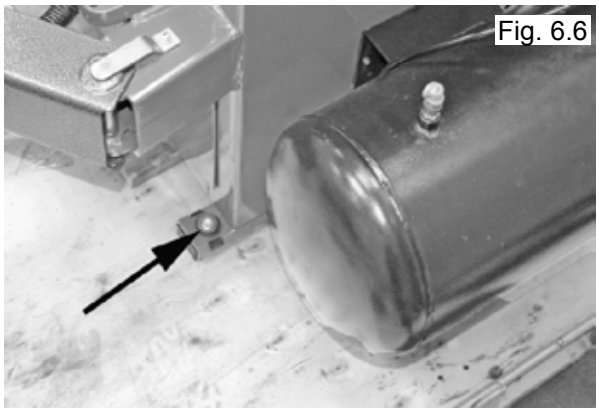


Fig. 6.6

CAUTION

Handling of the machine must be performed only with an appropriate lifting device such as a forklift or shop crane. Only personnel who are experienced and qualified on material handling procedures should handle any transportation or moving of machine.

5. Using a shop crane or fork lift with lifting straps, remove the Tire Changer from the wooden pallet. Use only properly rated lifting straps under the Tire Changer base. (See Fig. 6.7)

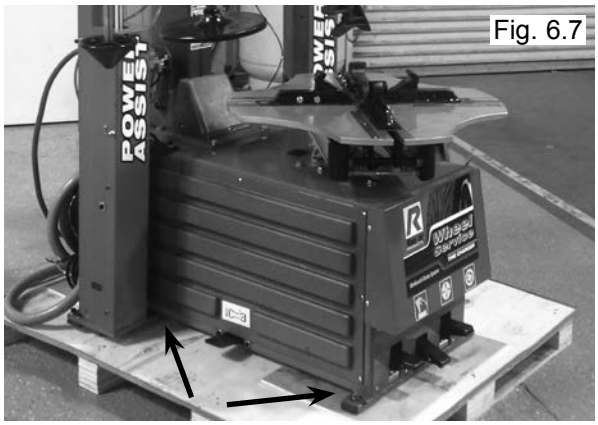


Fig. 6.7

6. Locate the tire changer using the guidelines in Section 7, page 11.

Required Tools	
1. Pallet jack or forklift for moving crate	8. Phillips and Slot head screw drivers
2. Shop crane	9. Metric Allen Key set
3 Utility knife	**Required Parts (not supplied)**
4. Crow bar or pry bar	1. Teflon tape
5. Tin Snips or Sheet Metal Snips	2. Air fitting to match shop Air Supply line
6. Hammer	3. Tool Oil
7. Open end metric wrenches and/or sockets	4. Anchor Bolts and Shims (if Anchoring)

SECTION 7

INSTALLATION LOCATION

DANGER

Disconnect tag and lock out power source before attempting to install, service, relocate or perform any maintenance.

Do not lift or move unit without appropriately rated equipment. Be sure the unit is securely attached to any lifting device used.

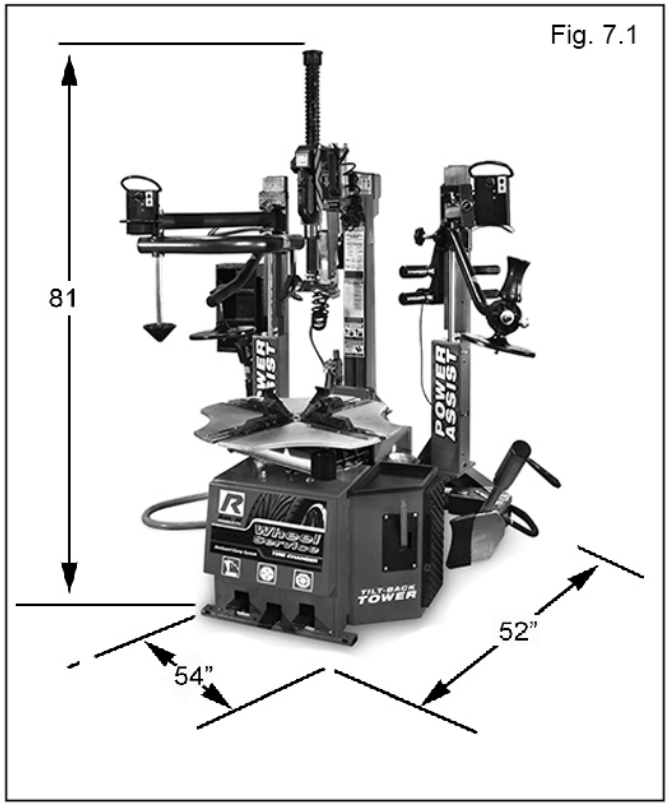
Proper unit installation is necessary for safe use and efficient operation. Proper installation also helps protect the unit from damage and makes service easier. Always keep this manual with unit.

Never use the wood shipping skid for mounting the unit.

Select a location using Figures 7.1 and 7.2. The area should provide the operator with enough space to use the equipment in a safe manner. The area selected should be well lit, easy to clean and should be away from oil, grease, brake lathe chips, etc. Avoid areas where bystanders and customers may be present.

Machine size is approximately:
54” W x 52” D X 81”H
R80EX

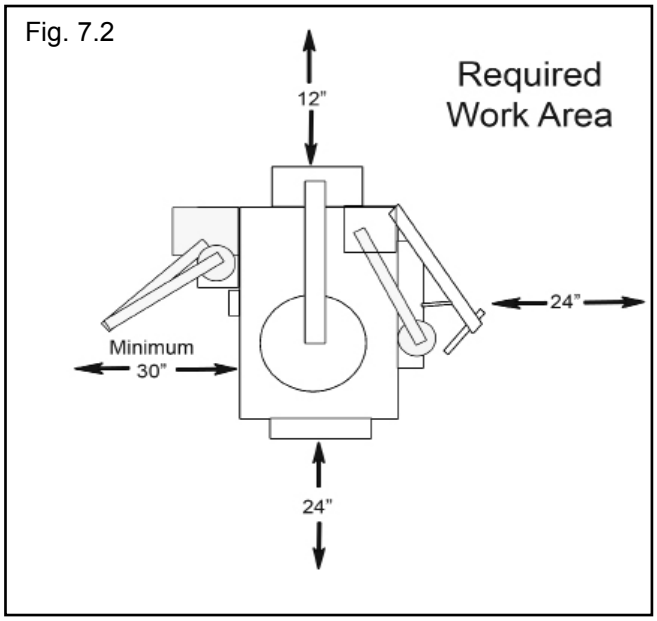
Fig. 7.1



DANGER

These measurements are the tire changer’s working range. Persons other than specially trained and authorized operators are expressly forbidden to enter this area. Choose a safe location that is in compliance with current work place safety regulations.
Failure to properly install the machine can lead to improper and unsafe operation.

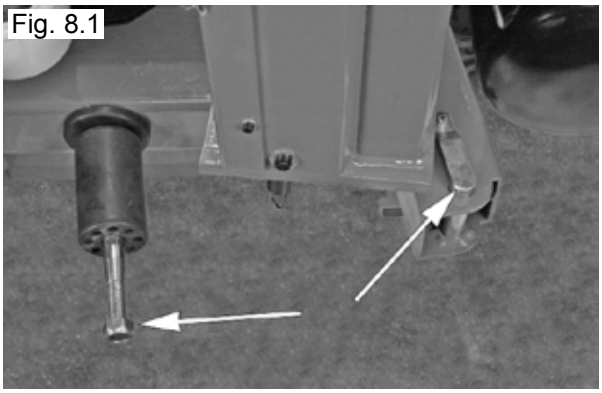
Fig. 7.2



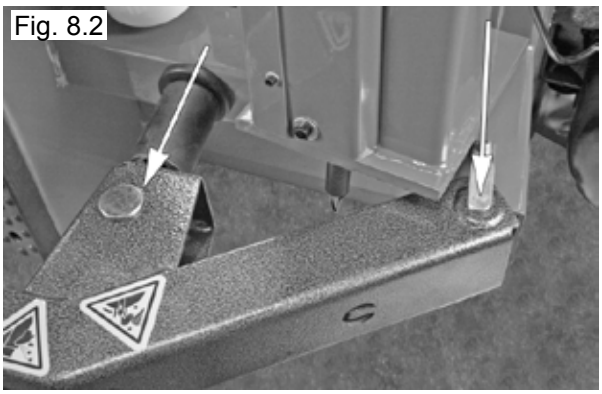
SECTION 8
ASSEMBLY

Bead Breaker Arm

1. Remove the Bead Breaker Arm Pin and the Bead Breaker Shaft Nyloc Nut. (See Fig. 8.1)



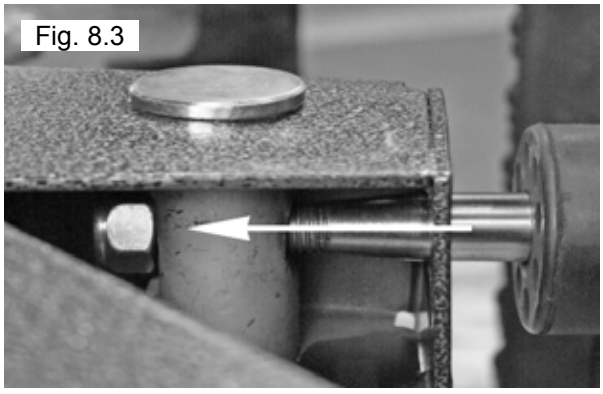
2. Align the Hole in the Beak Breaker Arm and insert the Bead Breaker Pivot Pin. (See Fig. 8.2)



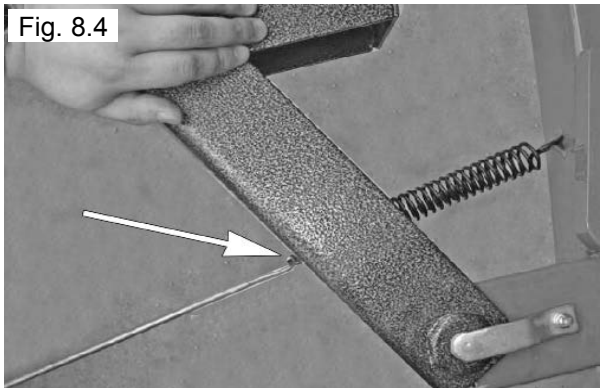
⚠ WARNING

Please follow the instructions written below. Bead Breaker Cylinder Shaft MUST BE installed as shown in step 3.

3. Align the Bead Breaker Cylinder Shaft with the Cylinder Shaft Pin. Rotate Pin so the flat side is on the same side as the Nut. (See Fig. 8.3)

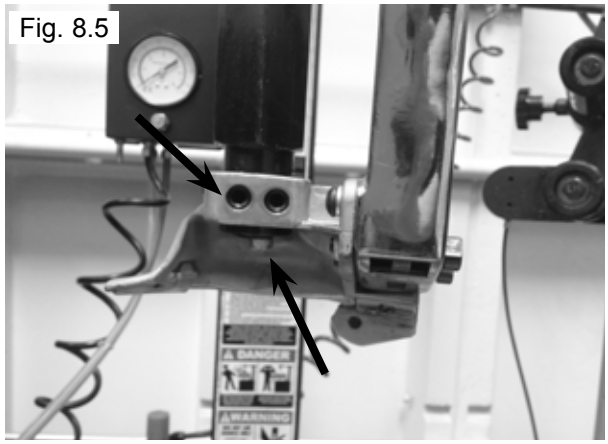


4. Using a long stiff wire hook or pliers. Stretch the Return Spring and clip to the Bead Breaker arm. (See Fig. 8.4)



Demount Head Assembly

1. Check that the Demount Head Bolt and Allen Screws are tightened. (See Fig. 8.5)



Tool Tray

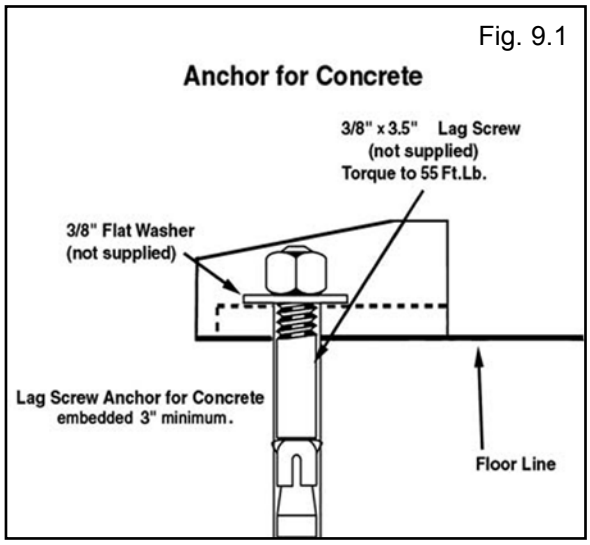
1. Bolt the Tool Tray to the Assist Tower as shown. (See Fig. 8.6)

SECTION 9

ANCHORING

It is not essential to anchor the machine to the floor, however, the floor must be smooth and level. When anchoring to a concrete floor use the mounting holes that are provided in the frame. Make sure the machine is solid and level and supported evenly on all anchor points. Solid shims may be used if necessary. (See Fig. 9.1)

Fig. 9.1



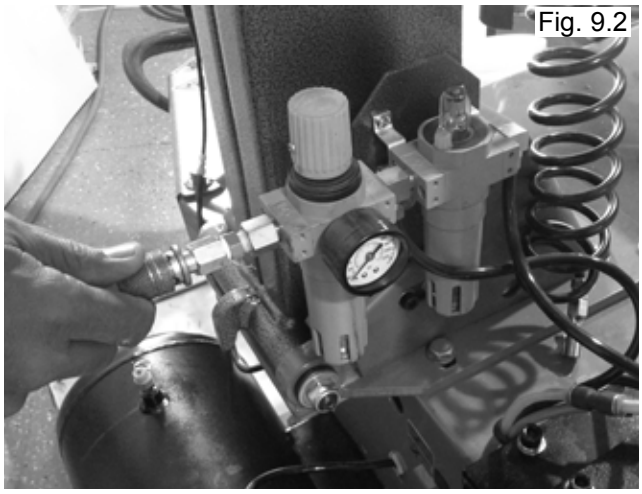
AIR SOURCE

This model requires a 14 to 15 CFM air source at 165 PSI maximum pressure. The safe operating pressure range for this model is between 140 PSI and 165 PSI at the machine. A 1/4" ID hose (or pipe) for connection to the machine is satisfactory. Sufficient air pressure assures good performance.

1. Connect the Air Supply to the Air Drier / Oiler. A proper fitting (not supplied) to match the supply line of the air supply connection is required. Use teflon tape (not supplied) on the NPT thread of the fitting.

This connection is located at the rear of the machine. (See Fig. 9.2)

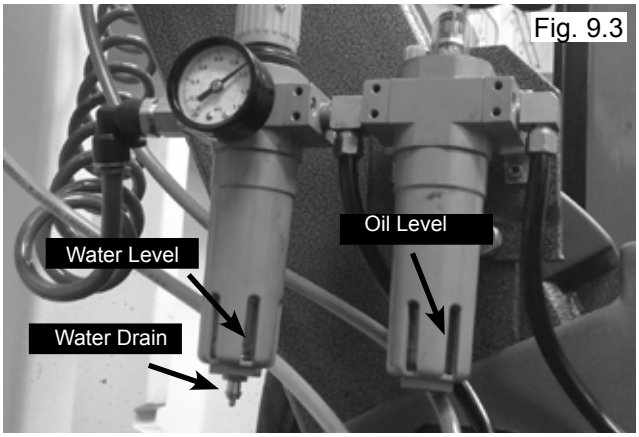
Fig. 9.2



OILER ADJUSTMENT

1. Check Oil Level on Oil Cup Site Glass. (See Fig. 9.3) If Oil level is low refer to Section 17, Page 32 for filling instructions.

Fig. 9.3



WARNING

Failure to properly maintain proper oil level and adjust the oil flow may void the warranty and damage the bead breaker cylinder and other air components.

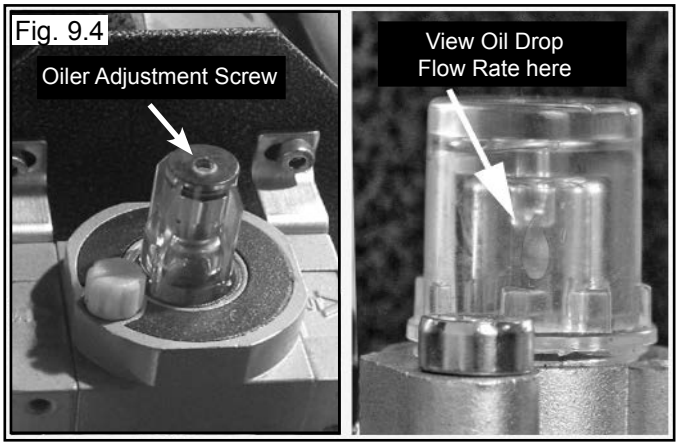
NOTE:
This adjustment will require two persons to perform.

2. With the Air source connected, depress the Bead Breaker Pedal to operate the Bead Breaker.

3. Observe the site glass and adjust the oil flow of the oiler by turning the Oiler Adjustment Knob so that 2-3 drops of oil drip through the site glass for each operation of the Bead Breaker Pedal. (See Fig 9.4)

NOTE:
More detailed Maintenance procedures are described in Section 17 on page 32.

Fig. 9.4

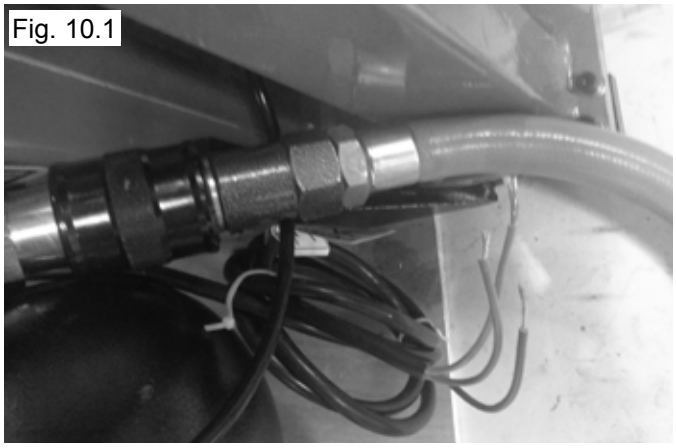


SECTION 10

ELECTRICAL SOURCE

This unit requires power from a 15 Amp electrical circuit. The unit is supplied standard with a 220 Volt power cord. (See Fig. 10.1)

Fig. 10.1

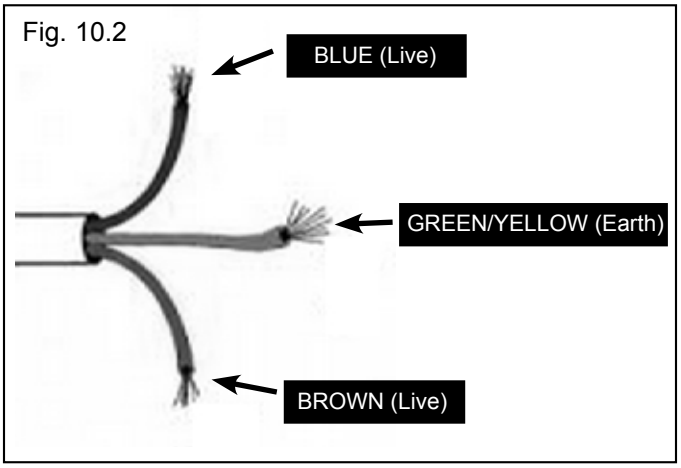


Refer to the serial tag of the machine for specific electrical requirements. Have a licensed electrical technician perform any necessary changes to the power source and power cord before plugging in the unit. The electrical source must have a solid connection between ground and building ground.

GUARD AGAINST ELECTRICAL SHOCK

This equipment must be grounded while in use to protect the operator from electric shock. Never connect the green/yellow stripe ground cord wire to a live terminal. This is for ground connection only. (See Fig 10.2)

Fig. 10.2



⚠ WARNING

The motor on this machine contains high voltage. Disconnect power at the receptacle before performing any electrical repairs. Secure plug so that it cannot be accidentally plugged in during service.

RISK OF EXPLOSION

⚠ DANGER

This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. This machine should not be located in a recessed area or below floor level.

⚠ WARNING

WIRING INSTRUCTIONS

⚠ DANGER

1. Overheating, short circuits and fire damage will result from inadequate wiring. Wiring must be installed in accordance with National Electric Code and local codes and standards covering electrical apparatus and wiring.

2. Be certain that adequate wire sizes are used, and that:

   - ♦ Service is of adequate amp rating.
   - ♦ The supply line has the same electrical characteristics (voltage, cycles and phase) as the motor.
   - ♦ The line wire is the proper size and that no other equipment is operated from the same line.

Electrical Source
This unit requires power from a 15 Amp electrical circuit. Refer to the serial tag of the machine for specific electrical requirements. Have a licensed electrical technician perform any necessary changes to the power source before plugging in the unit. The electrical source must have a solid connection between ground and building ground.

GUARD AGAINST ELECTRIC SHOCK

This equipment must be grounded while in use to protect the operator from electric shock.
Never connect the green power cord wire to a live terminal. This is for ground only.

DANGER

The motor on this machine contains high voltage. Disconnect power at the receptacle before performing any electrical repairs.
Secure plug so that it cannot be accidentally plugged in during service.

WARNING - RISK OF EXPLOSION

This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors.
This machine should not be located in a recessed area or below floor level.

⚠ CAUTION

Check the voltage, phase and proper amperage requirements for the motor shown on the motor plate.
Wiring should be performed by a certified electrician only. (See Fig. 10.3)

IMPORTANT NOTE:
STANDARD WIRING IS 220 VOLTS.

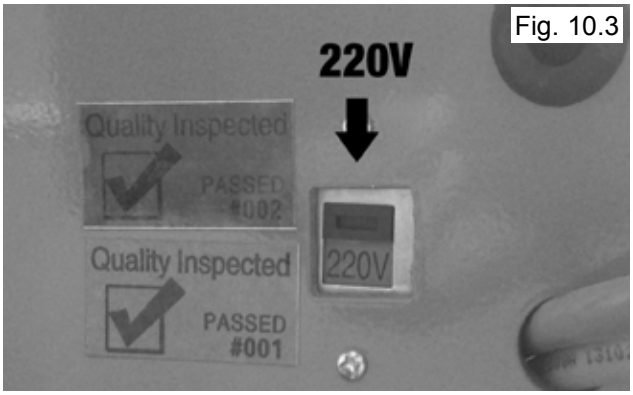


Fig. 10.3

NOTE: THE R80EX IS 220V ONLY.

SECTION 11

OPERATING INSTRUCTIONS

The unit must be properly operated and maintained to help avoid accidents that could damage the unit and injure the operator or bystanders. This section of the Operating Instructions manual review basic operations and use of controls. These instructions should be reviewed with all employees before they are allowed to work with the machine.
Keep these instructions near the machine for easy reference.

⚠ CAUTION

This machine may operate differently from machines you have previously operated. Practice with a regular steel wheel and tire combination to familiarize yourself with the machine's operation and function.

BEAD LOOSENING AND DEMOUNTING

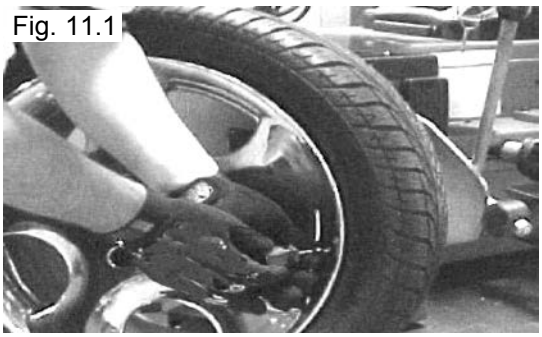
◆ Remember to remove all weights from both sides of the wheel. Weights left on the back side of the wheel may cause the wheel to be clamped un-level. This may result in the combination mount/demount head contacting the rim causing scratches. On alloy wheels, always rotate the wheel one turn after setting the head to insure proper wheel chucking.

◆ Always review nicks and scratches with owners of expensive wheel and tire combinations prior to servicing.

◆ Review the performance wheel section of this manual prior to servicing performance tire/wheel combinations.

1. Deflate tire completely by removing the valve core from the valve stem. (See Fig. 11.1)

Fig. 11.1



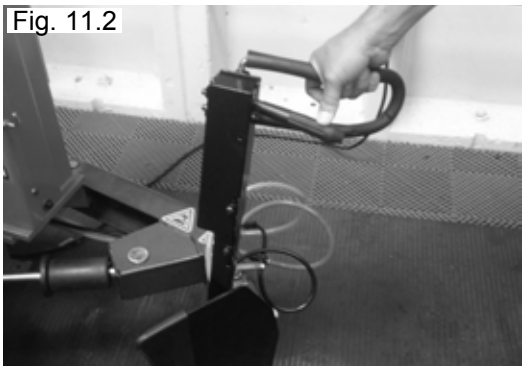
2. The clamps on the table top may extend beyond the table top itself. To avoid damaging the clamps and/or wheel, move the clamps to their full inward position before positioning a tire for bead loosening.

3. Always loosen the bead on the narrow side of the wheels drop center first. (See Fig. 11.4 and Page 17 for better description of the drop center.)

4. Use extra care in positioning the bead breaker shoe on larger wheels/tires, and on alloy wheels. Make sure the shoe rests next to but not on the rim, and not on the tire sidewall.

5. Pull the bead breaker shoe away from the machine by pushing down on the pneumatic bead breaker air valve, as shown in the picture below. Roll the wheel into position and verify that the valve stem is at 2 o'clock. (See Fig. 11.2)

Fig. 11.2



6. Position the bead breaker shoe against the tire next to, but not on, the rim. (See Fig. 11.3) Pull the pneumatic bead breaker air valve to actuate the shoe and loosen the bead. It may be necessary to loosen the bead in multiple locations around the tire. (See Fig. 11.4)

Fig. 11.3

Fig. 11.4

NOTE:
Procedures shown below may or may not include options or tools not a part or your particular model of tire changer.

⚠ DANGER

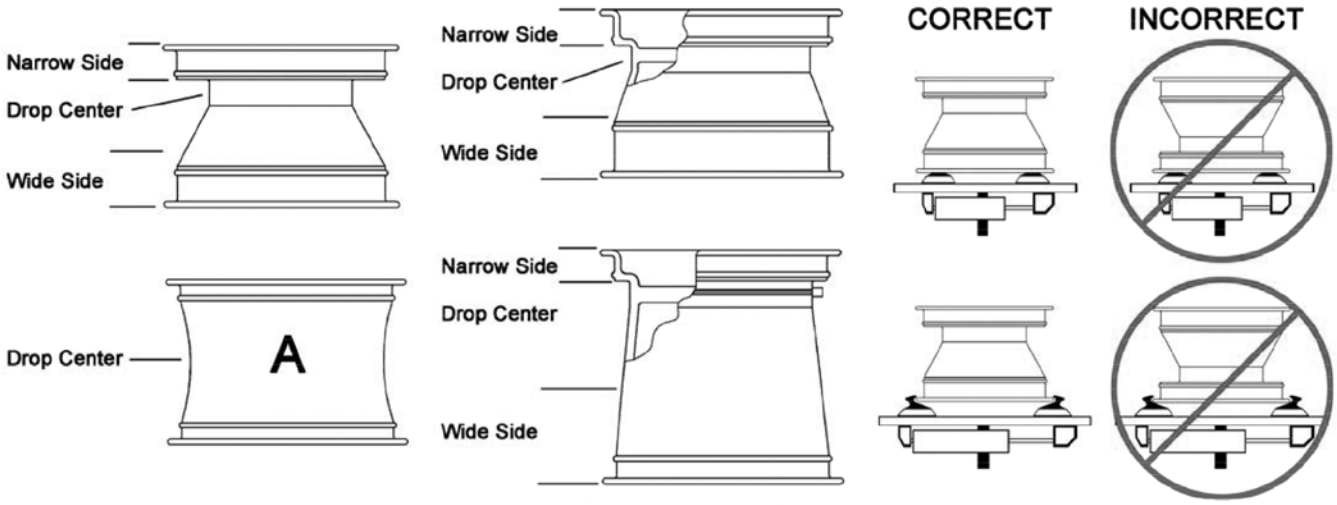
The following instructions help identify how to properly mount wheels on the tire changer turntable. Failure to follow these instructions may lead to tire and/or wheel damage, equipment damage or failure, serious personal injury or death to operator or bystanders or damage to property.

IMPORTANT WHEEL MOUNTING INSTRUCTIONS

1. It is important to understand that tires and/or tire beads do not stretch. It is nearly impossible to mount or dismount the top bead of the tire unless the top bead of the tire is positioned deep into the drop center area of the wheel.

2. Find the position of the drop center on the wheel. Clearly identify the Drop Center, Narrow Side and Wide Side flanges.

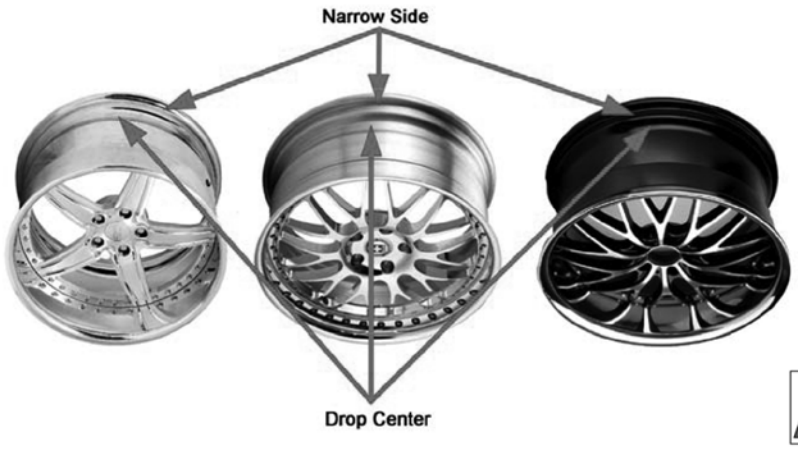
3. The tire must ALWAYS be demounted or mounted with the wheel positioned on the turntable with the Narrow Side facing upward and the deepest part of the Drop Center facing upward.



WARNING! - The wheel illustrated above in diagram A has little or no prominent drop center. These are not DOT approved wheel configurations. The tire or wheel - or both - can be damaged during mounting procedures causing the tire to explode under pressure, resulting in serious injury or death. If you attempt to mount/demount this type of wheel, use extreme caution.

IMPORTANT NOTE – Most aftermarket and many OEM performance wheels are REVERSE DROP-CENTER configurations. These wheels MUST be mounted on the turntable with the hub or wheel-face POSITIONED DOWNWARD on the turntable and the Narrow Side and deep part of the Drop Center facing upward.

☐

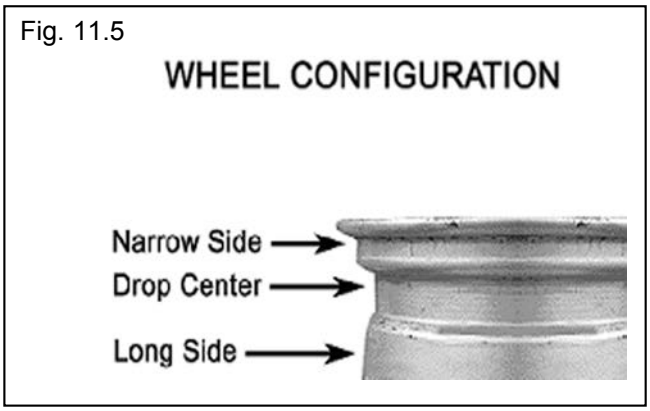


Ranger PRODUCTS

7. Turn wheel around and repeat procedure on the other side of the wheel. This should be the long side of the drop center. It will be easier to clamp the wheel to the table top if the lower bead is loosened last.

8. Determine the mounting side of the wheel. The mounting side is the narrow side of the drop center. The tire is removed for clarity. (See Fig. 11.5 and Page 17)

Fig. 11.5



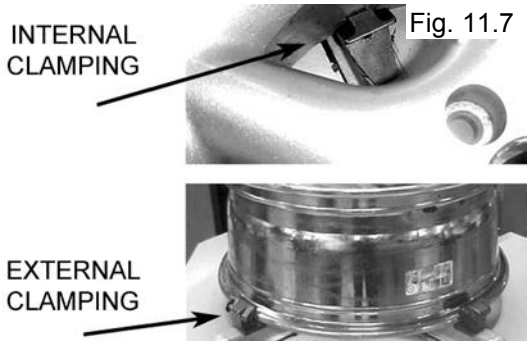
9. Place tire/wheel assembly on table top with mounting side up. (See Fig. 11.6)

Fig. 11.6

NOTE:
Clamp steel wheels from the inside (clamps push outward against wheel). Clamp mag and custom wheels from the outside (Clamps push inward against the outside rim edge). Refer to the Performance Tires and Wheels section.

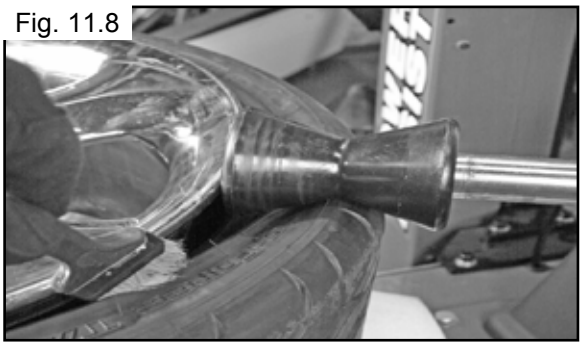
10. Use the clamp control pedal to move the clamps inward (pedal down) or outward (pedal up). (See Fig. 11.7)

Fig. 11.7



11. Apply tire manufacturer's approved rubber lubricant liberally to entire circumference of both beads after loosening bead and placing on table top. Using the mount/demount roller to hold down the top bead while rotating the turntable will make lubrication easier. (See Fig. 11.8)

Fig. 11.8



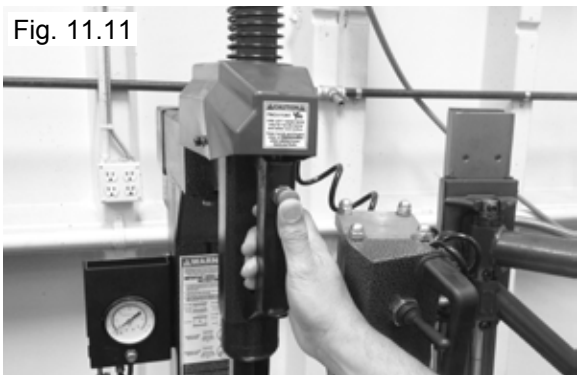
12. Use the lower bead helpers to assist in the bottom bead lubrication. (See Fig. 11.9)

Fig. 11.9

13. Move the tower forward by depressing the Tower Tilt Pedal then press the control button to unlock the horizontal slide. Pull the mount/demount Head forward. (See Fig. 11.10-11)

Fig. 11.10

Fig. 11.11



14. Push the vertical slide down and position the demount head into contact with the rim edge. (See Fig. 11.12-13)

Fig. 11.12

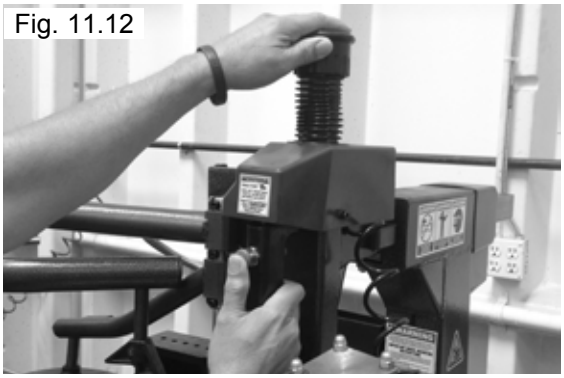
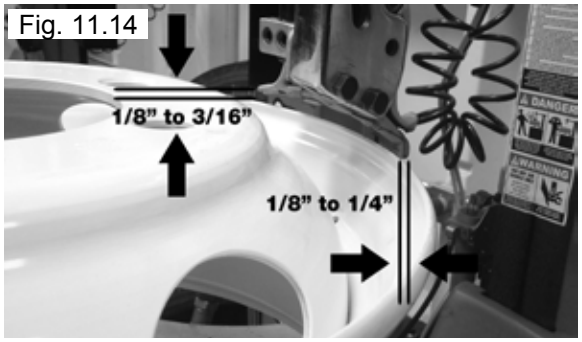


Fig. 11.13

15. Push the locking valve button to lock the slides into place. As the slides are locked, the mount/demount head will move upward approximately 1/8 inch and backward 1/8 inch from the rim edge. The mount/demount head roller should not be in contact with the rim edge. (See Fig. 11.14)

Fig. 11.14



NOTE:
This clearance will be maintained as long as the slide locking valve remains locked. The operator may tilt the tower back out of the way and back into place again without needing to reposition the head when changing a like set of wheels. The tool clearance may change with machine use and should be inspected often. Failure to maintain proper clearance may result in damage to the wheel rim or tire.

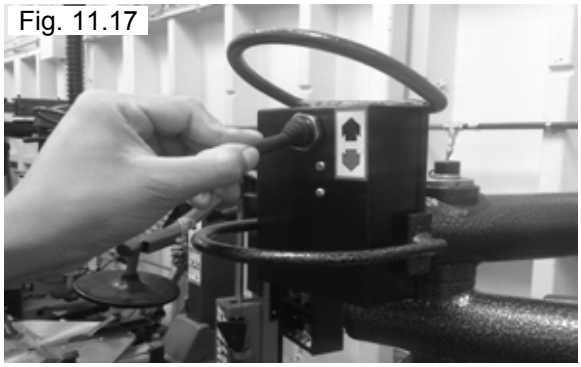
16. Move the left hand top helper into position opposite the mount/demount head positioning the edge of the helper just outside the rim edge. (See Fig. 11.15-16)

Fig. 11.15

Fig. 11.16

17. Press down on the left hand control valve. (See Fig. 11.17)

Fig. 11.17



18. Power the left top helper down to force the tire bead into the drop center of the wheel. (See Fig. 11.18-19)

Fig. 11.18

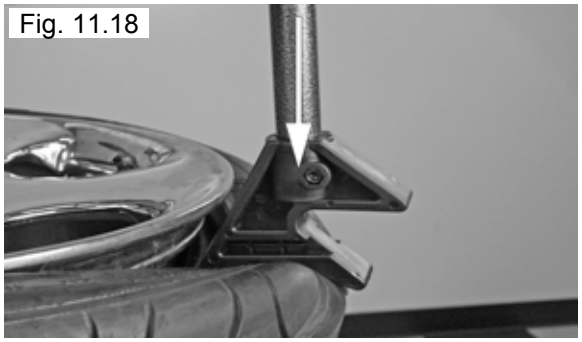



Fig. 11.19

19. Move the right hand top helper roller into position over the tire just outside the rim edge. Press down on the right hand control valve and force the tire bead down. This will make it easier to insert the pneumatic mount demount head. (See Fig. 11.20)

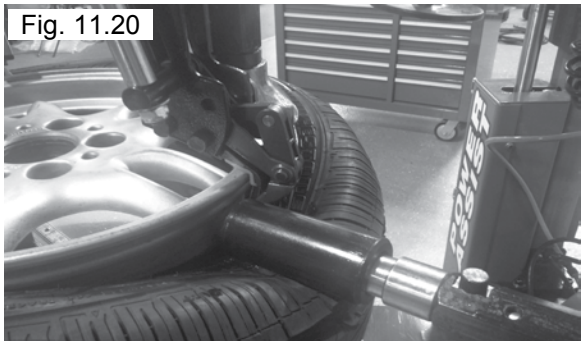


Fig. 11.20

20. Press down pneumatic mount/demount control valve lever to lower the mounting hook under the lip of the tire. (See Fig. 11.21)

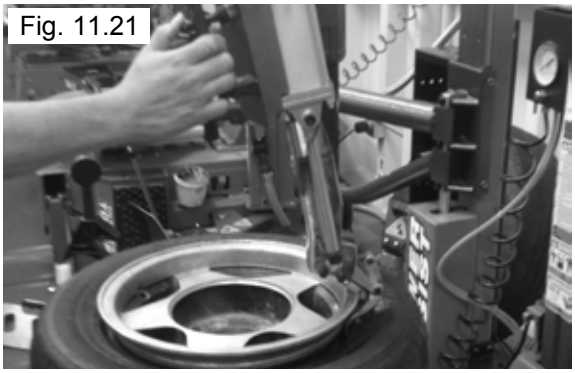


Fig. 11.21

21. Insert the pneumatic mount/demount lever down between the rim and the tire lip. Grab tire bead with mounting hook. Raise the mounting hook with the pneumatic lever slightly above the top of the rim. (See Fig. 11.22 - 11.23).

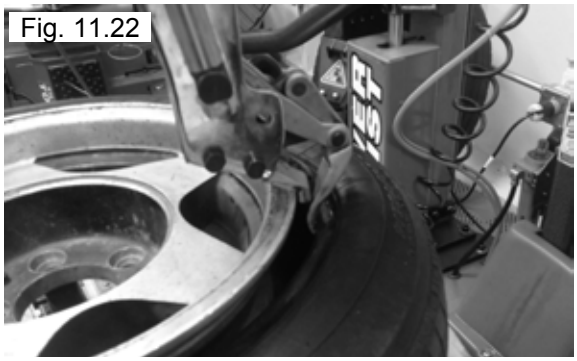


Fig. 11.22

NOTE: It may be necessary to use roller bead to assist in grabbing tire lip.

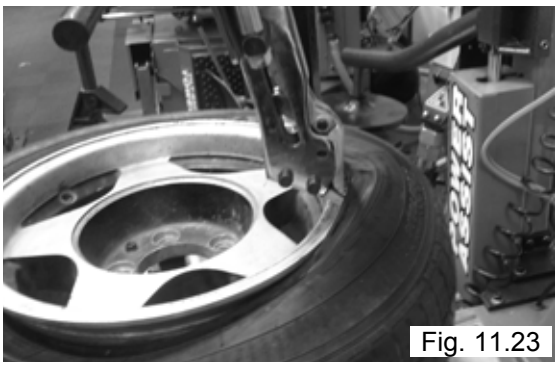


Fig. 11.23

22. Rotate the table top and wheel clockwise to remove the tire completely. (See Fig. 11-24)

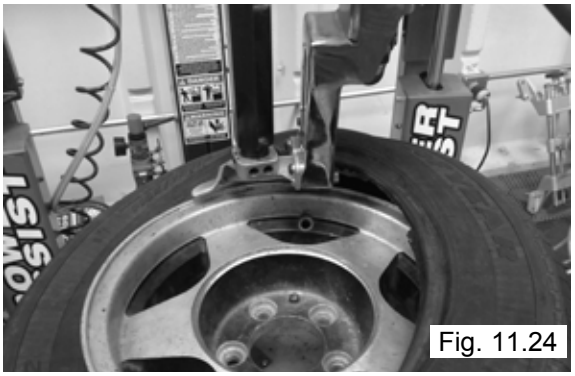


Fig. 11.24

23. Position tool bar under tire, lift up using right hand pneumatic control valve lever. Depress the table top pedal to rotate the wheel. Tool bar will guide the bead up and over the edge of the wheel. Continue rotation until the lower bead is demounted. The helper discs should be removed during rotation. Swing them out of the way to complete demounting. (See Fig. 11.25 -11.27)

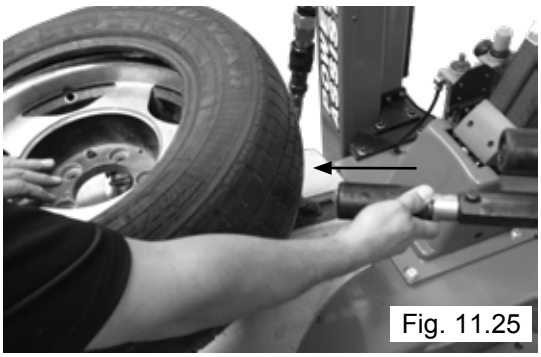


Fig. 11.25

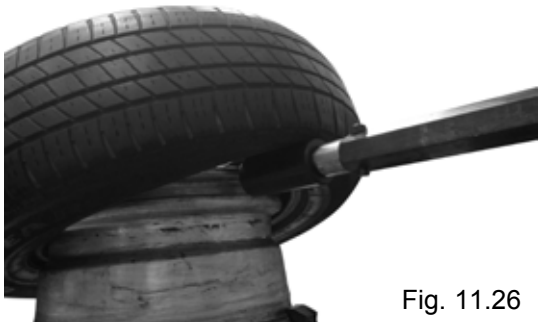


Fig. 11.26

Fig. 11.27

DANGER

The demount head may encounter resistance or come under load at times during the mount and demount procedures.

SECTION 12

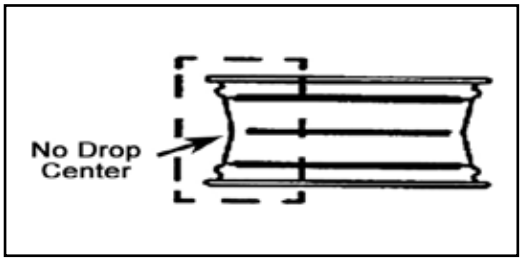
CUSTOM AND SPECIAL WHEELS

DANGER

If a custom wheel is damaged in dismounting, STOP, and avoid damaging the other wheels. Continue only when the cause is identified and corrected.

Alloy Wheels

Some manufacturers offer wheels with little or no drop center. These are not DOT approved. The tire or wheel - or both - can be damaged and the tire could explode under pressure, resulting in serious injury or death. If you attempt to mount/demount this type of wheel, use extreme caution.

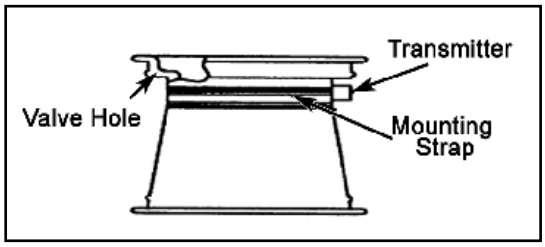


European Performance Wheels (Asymmetrical Hump)

Some European wheels have very large humps except near the valve hole. On these wheels, the beads should be loosened at the valve hole on both the upper and lower sides first.

Wheels with Low Pressure Warning Sensors

Performance wheels on some vehicles (including Corvette, BMW, Lamborghini Diablo) have a pressure sensor strapped to the rim opposite the valve hole. On these wheels, the beads should be loosened at the valve hole on both upper and lower sides first.



DEMOUNTING TUBE TYPE TIRES

1. After both tire beads are loosened, lubricate the beads and rim liberally.

2. Position the demount head and bead lifting tool as described earlier paying careful attention not to pinch the tube. Depress the table top pedal and rotate only a short distance at a time. This allows you to stop the process should you suspect the tube is getting pinched.

3. After upper bead is demounted, remove tube and demount lower bead.

NOTE:
Table top rotation can be stopped at any time by removing your foot from the rotation pedal. Normal table top rotation for demounting is clockwise. Depress the table top pedal to rotate this direction. To rotate the table top counter-clockwise, lift the pedal up with your toe.

FOR TUBE-TYPE TIRES
With tube-type tires, demount the upper bead and remove the tube before de-mounting the lower bead.

WARNING

Check tire and wheel carefully before mounting. Make sure the tire bead diameter and wheel diameter match exactly. Consult the Rubber Manufacturer's Association for approved rim widths for tire sizes.

⚠ DANGER

Attempts to force a bead seat on mis-matched tires and wheels can cause the tire to violently explode, causing serious personal injury or death to operator and/or bystanders.

⚠ WARNING

Never mount a tire and wheel handed to you by anyone without checking both tire and wheel for damage and compatibility. Be extra cautious of persons without knowledge of tire service. Keep bystanders out of service area.

SECTION 13

MOUNTING

⚠ WARNING

Never mount a damaged tire. Never mount a tire on a rusty or damaged wheel. Damaged tires and/or wheels may explode. If you damage the tire bead during mounting, STOP! Remove the tire and mark it as damaged. Do not mount a damaged tire.

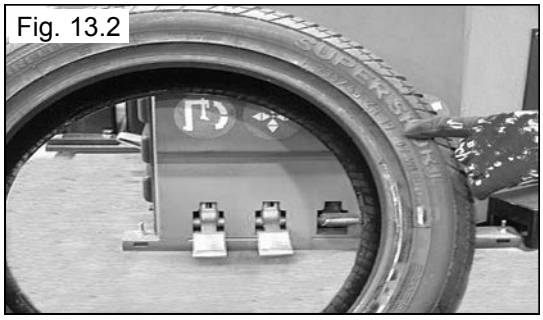
This information must be read and followed carefully to prevent accidents and injuries during mounting.

1. Inspect the wheel closely for damage. Clean the wheel and remove any light corrosion or rubber residue. Do not attempt to service heavily corroded wheels. (See Fig. 13.1)

Fig. 13.1

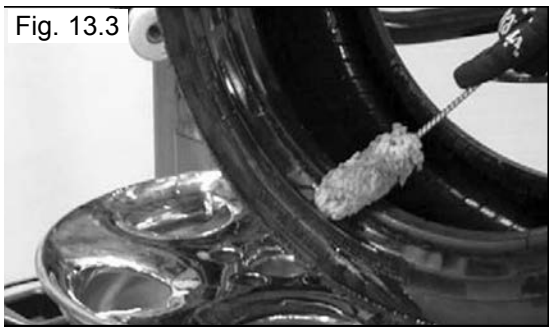
2. Inspect tire for damage, paying close attention to the beads. Verify size match between tire and wheel. (See Fig. 13.2)

Fig. 13.2



3. Lubricate both tire beads liberally with tire manufacturer approved lubricant. (See Fig. 13.3)

Fig. 13.3



4. Place tire over wheel and move tower and mount/demount head into position as described earlier. Position tire so that the lower bead is above the left side of the mount/demount head and below the right front knob. (See Fig. 13.4)

Fig. 13.4

5. Manually push the tire down into the drop center of the wheel directly across from the mount head to reduce the tensional force on the bead. Depress the table top pedal and rotate the wheel to mount the lower bead. Rotate the table top until the lower bead is fully mounted. (See Fig. 13.5-6)

Fig.13.5

Fig.13.6

6. For the top bead, rotate the table top until the valve stem is directly across from the mount head. Lift the upper bead above the left side of the mount/demount head and below the right front knob. (See Fig. 13.7-8)

Fig.13.7

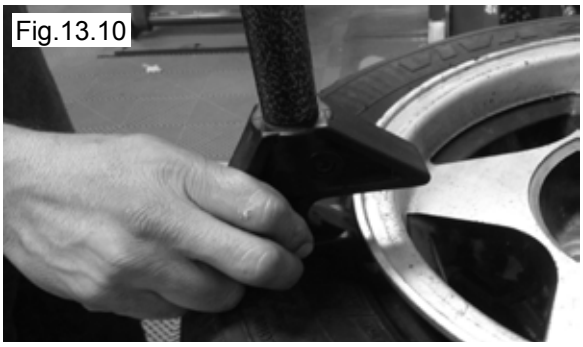
Fig. 13.8

7. With the right side assist roller, press down on the tire near the right side of the mount head. (See Fig. 13.9)

Fig.13.9

8. With the left side helper, press down on the tire near the right side assist roller to hold the tire in the drop center. (See Fig. 13.10)

Fig.13.10



⚠ WARNING

Do not force the tire onto the rim. Bead damage could result making the tire unsafe and/or creating the risk of injury.

NOTE

If table top rotation stalls, reverse the table top momentarily until the tire bead is again loose on the wheel. Lubricate tire beads liberally with tire manufacturer approved lubricant.

Reposition the tire on the mount head, make sure the bead is correctly positioned in the drop center of the wheel, then attempt mounting again.

9. Press the table top pedal and rotate the tire until the bead is mounted. The left side helper shoe will follow the tire during rotation. (See Fig. 13.11-14)

Fig.13.11

Fig.13.12

Fig.13.13

Fig.13.14

SECTION 14

MOUNTING TUBE TYPE TIRES

1. Lubricate the beads and rim liberally.

2. Position the demount head and bead lifting tool as described earlier. Mount the bottom bead first.

3. Round out the tube with a small amount of air. Avoid pinching or forcing the tube. Apply rubber lubricant to the tube.

4. Insert the tube into the tire paying careful attention not to pinch the tube.

5. Depress the table top pedal and rotate only a short distance at a time. This allows you to stop the process should you suspect the tube is getting pinched.

6. Mount the top bead.

For additional copies of this manual
or further information, contact:

BendPak Inc. / Ranger Products
1645 Lemonwood Dr.,
Santa Paula, CA. 93060
1-805-933-9970
www.bendpak.com
www.rangerproducts.com

SECTION 15

INFLATION INSTRUCTIONS

Tire inflation is performed in four steps: Restraint, Bead Seal, Bead Seat, and Inflation. Read the explanation of each step and understand them thoroughly before proceeding.

⚠ DANGER

CHECK INFLATION GAUGE FOR PROPER OPERATION. ACCURATE PRESSURE READINGS ARE IMPORTANT TO SAFE TIRE INFLATION. REFER TO THE OPERATING MAINTENANCE SECTION OF THIS MANUAL FOR INSTRUCTIONS.

⚠ WARNING

TIRE FAILURE UNDER PRESSURE IS HAZARDOUS. THIS TIRE CHANGER IS NOT INTENDED TO BE A SAFETY DEVICE TO CONTAIN EXPLODING TIRES, TUBES, WHEELS OR BEAD SEALING EQUIPMENT. INSPECT TIRE AND WHEEL CAREFULLY FOR MATCH, WEAR, OR DEFECTS BEFORE MOUNTING. ALWAYS USE APPROVED TIRE BEAD LUBRICANT DURING MOUNTING AND INFLATION.
THE INFLATION PEDAL, LOCATED AT THE CENTER OF THE FRONT SIDE OF THE MACHINE, CONTROLS THE FLOW OF AIR THROUGH THE INFLATION HOSE.

⚠ DANGER

THE CLIP-ON AIR CHUCK ON THE END OF THE INFLATION HOSE AND ALL INFLATION RELATED COMPONENTS SHOULD BE CHECK WEEKLY FOR PROPER OPERATION. DO NOT USE THIS MACHINE FOR TIRE INFLATION IN ANY PARTS ARE DAMAGED OR APPEAR NO TO BE IN PROPER WORKING ORDER.

INFLATION PEDAL OPERATION

The inflation pedal located at the front of the checks air pressure in the tire; controls the flow of air through the inflation hose. (See Fig. 15.1)

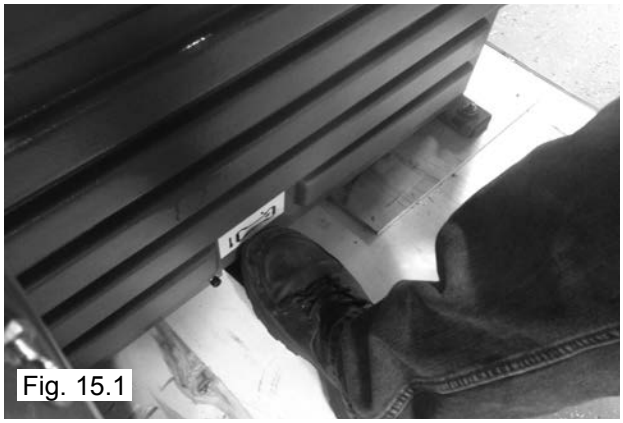


Fig. 15.1

Tire Inflation – This is the activated position. With the inflation hose attached to the tire valve and the pedal depressed, line pressure is allowed to flow through the valve and into the tire for inflation. Tire pressure is indicated on the gauge in this position. (See Fig. 15.2 - 15.3))

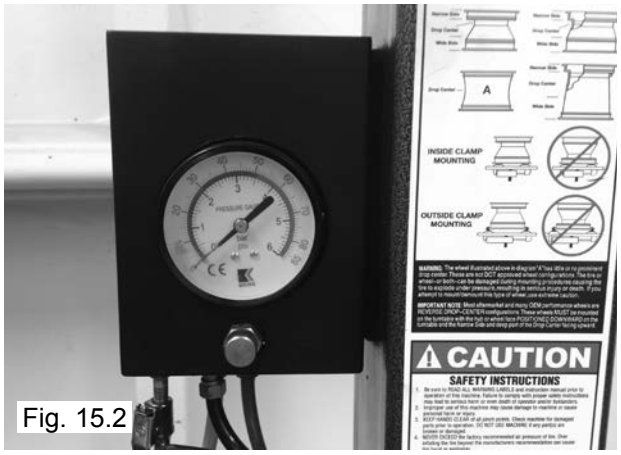


Fig. 15.2

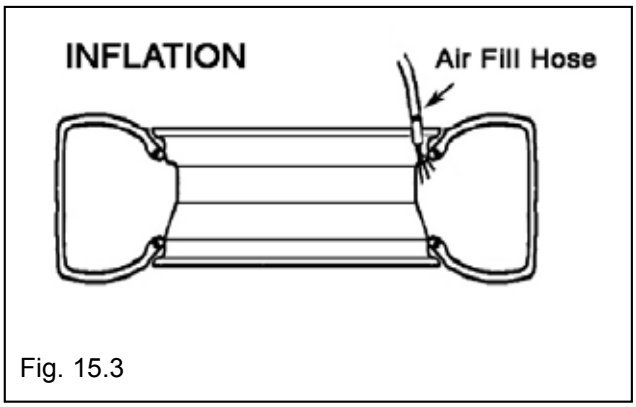


Fig. 15.3

SECTION 16

STAGES OF INFLATION

Review the following descriptions and diagrams carefully. Refer to them as necessary during wheel restraint, bead sealing, bead seating, and inflation to verify that you are proceeding properly and safely.

STAGE ONE / WHEEL RESTRAINT

WARNING

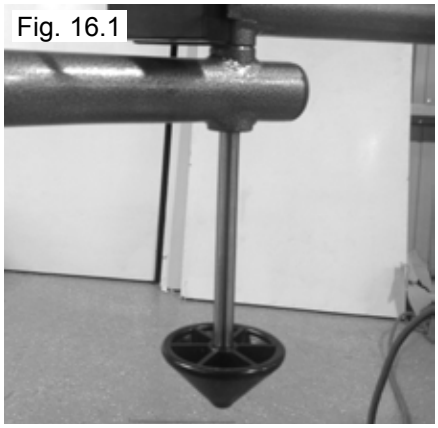
THIS DEVICE ACTS AS A RESTRAINT DEVICE ONLY. IT WILL NOT PROTECT OPERATORS IN THE EVENT OF CATASTROPHIC TIRE/ WHEEL RUPTURE OR FAILURE. ALWAYS US EXTREME CAUTION DURING THE INFLATION PROCEDURE. AS AN ADDED SAFETY PRECAUTION, SAFETY CAGES THAT CONFORM TO OSHA STANDARD 1910.177 ARE RECOMMENDED.

The tire rim needs to be securely mounted to the turntable during all stages of inflation. As an added safety precaution, a wheel restraint devise has been added to protect operators during tire inflation.

1. Check that rim is properly mounted and secure. Refer to Mounting section in Section 11 for review.

2. Raise the left helper and support assembly and insert the restraint devise as shown. (See Fig. 16.1)

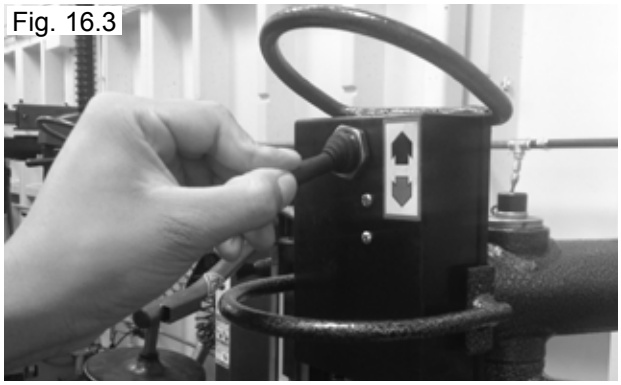
Fig. 16.1



3. Make sure the restraint tool is centered in the center hub of the wheel then press down on the left hand control valve. (See Fig.16.2 - 3)

Fig. 16.2

Fig. 16.3



STAGE TWO / BEAD SEALING

1. Remove the Valve Stem Core and position Valve Stem and connect the Inflation Hose. (See Fig. 16.4)

Fig. 16.4

2. Hold tire up against upper edge of the wheel. Be sure tires top bead is over the bottom of the valve stem. (See Fig. 16.5)

Fig. 16.5

CAUTION

NEVER POINT NOZZLE TOWARDS YOURSELF OR OTHER PERSONS. INSPECT NOZZLE, TIRE AND WHEEL FOR DEBRIS. NOZZLE MUST BE POINTED TOWARD TIRE BEAD AREA. HOLD NOZZLE SECURELY WITH BOTH HANDS AT ALL TIMES. NEVER OPERATE THE NOZZLE WITHOUT A TIRE AND WHEEL POSITIONED ON THE TABLE. DIRT AND DEBRIS COULD BE BLOWN INTO THE AIR WITH ENOUGH FORCE TO INJURE THE OPERATOR OR BYSTANDERS.

3. Position the Turbo-Blast Nozzle to direct air towards the Rim Center just under the Rim lip. (See Fig. 16.6)

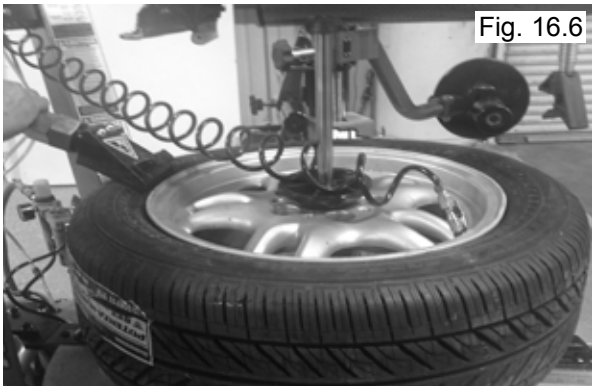


Fig. 16.6

4. Depress inflation pedal and open the Turbo-Blast Valve The blast of air from the valve will expand tire and seal the beads. (See Fig. 16.7)

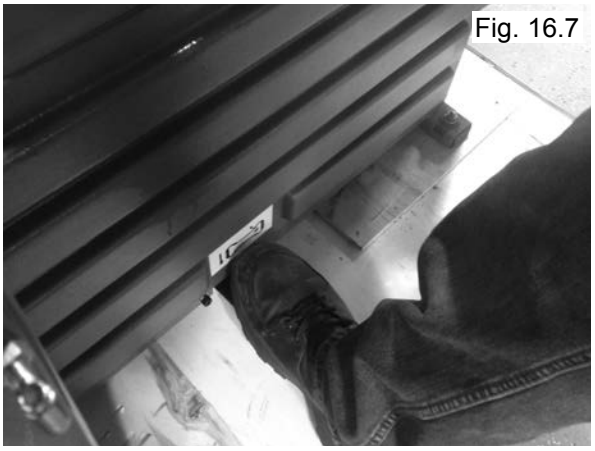


Fig. 16.7

5. Release the inflation pedal. Verify that both beads are completely sealed to the wheel. Repeat these steps if beads have not sealed. It may be necessary to wait a few seconds for the air storage tank to recover before attempting again.

If tire and wheel are properly lubricated and the woperator cannot achieve bead seal after a few attempts, the valve core should be removed from the valve stem to allow more air flow into the tire to assist with bead seal. After bead seal is achieved, remove the chuck and reinstall the valve core.

WARNING

CHECK THE FUNCTION OF THE PRESSURE LIMITER REGULARLY AND MAINTAIN IT ACCORDING THE INSTRUCTIONS PROVIDED IN THIS MANUAL FOR SAFE AND PROPER OPERATION. DO NOT TAMPER WITH OR ATTEMPT TO ADJUST THE PRESSURE LIMITER. TIRES REQUIRING INFLATION BEYOND 60 PSI SHOULD ONLY BE INFLATED IN A SAFETY CAGE.

The unit is equipped with a pressure limiter/regulator to assist the operator with proper tire inflation. The pressure limiter will keep most car and light truck tires from inflating beyond 60 PSI (smaller tires may reach higher pressures). It is the operators responsibility to follow all instructions and to control inflation pressure as specified in these instructions. (See Fig. 16.8)

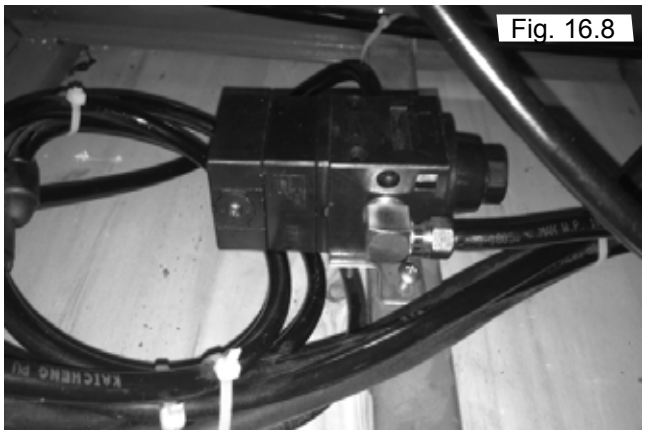


Fig. 16.8

FOR TECHNICAL QUESTIONS, PLEASE CALL
(800) 253-2363 EXT. 196

TO ORDER PARTS, PLEASE CALL
(800) 253-2363 EXT. 191

STAGE THREE / BEAD SEATING

Bead seating usually occurs on the long tapered side of the wheel first and the shorter side last. Bead seating will usually require at least 7 PSI in the tire. 40 PSI is the maximum safe pressure at this stage regardless of tire operating pressure. Most European import cars and many aftermarket alloy wheels are very tight and can be difficult to bead seat. Also note that asymmetrical hump and run-flat tires are extremely difficult to bead seat. Follow tire manufacturer's recommended procedure for bead seating.

⚠ WARNING

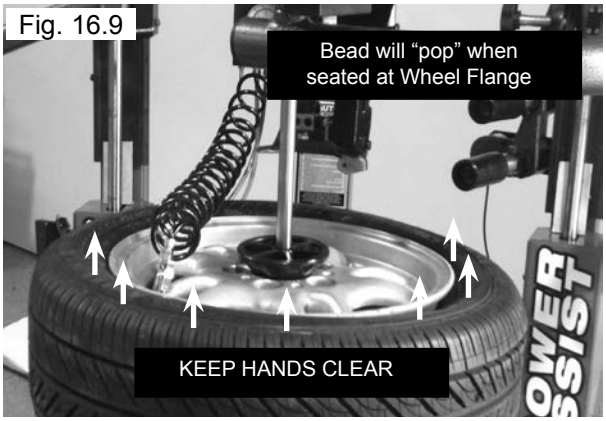
OPERATOR SHOULD KEEP HANDS, ARMS AND ENTIRE BODY AWAY FROM THE TIRE DURING THE REMAINING BEAD SEAT AND INFLATION PROCEDURES. DO NOT STAND OVER TIRE, AS PERSONAL INJURY COULD RESULT FROM INFLATING TIRE. AVOID DISTRACTION DURING INFLATION. CHECK TIRE PRESSURE FREQUENTLY TO AVOID OVER INFLATION. EXCESSIVE PRESSURE CAN CAUSE TIRES TO EXPLODE, CAUSING SERIOUS INJURY OR DEATH TO OPERATOR OR BYSTANDER.

1. Once tire pressure is indicated on the air gauge (inflation pedal depressed, continue to inject air into the tire in short intervals. Check the pressure frequently. Stand back during bead seat. Keep hands, arms, and entire body away from tire during this procedure. Tire beads should move outward and "pop" into their bead seat position as pressure inside the tire increases. If this does not happen, a problem exists. Investigate carefully. (See Fig. 16.9)

⚠ WARNING

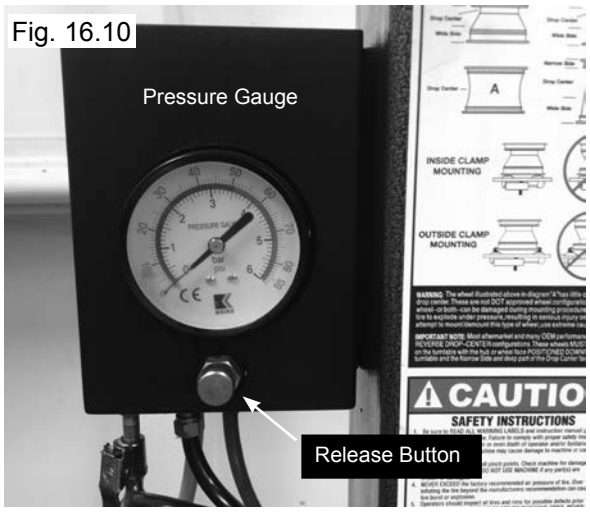
KEEP HANDS AND FINGERS CLEAR.
KEEP ENTIRE BODY AWAY FROM THE TIRE.

Fig. 16.9



2. Release air pressure from the tire by pressing the manual release valve button. NOTE: The inflation hose must be attached to the valve stem during this procedure. (See Fig. 16.10)

Fig. 16.10



STAGE FOUR / TIRE INFLATION

1. Make sure both beads are seated. When both beads are seated, the tire is ready for inflation.

2. Replace the valve core if it was removed.

3. Depress the inflation pedal to position two to inflate the tire. **DO NOT STAND OVER TIRE DURING INFLATION.**

4. Do not inflate the tire above the manufacturer's recommended pressure as stamped on the tire sidewall. The typical inflation pressure for automobile tires is between 24 and 45 PSI. Light truck inflation pressure typically covers a wider range. Release air pressure from the tire by pressing the manual release valve button.

⚠ WARNING

CHECK TIRE PRESSURE FREQUENTLY. NEVER EXCEED 40 PSI WHILE SEATING BEADS. ONCE SEATED, NEVER EXCEED TIRE MANUFACTURER'S RECOMMENDED AIR PRESSURE. TIRES CAN EXPLODE, ESPECIALLY IF THEY ARE INFLATED BEYOND THEIR LIMITS. AT ALL PRESSURE LEVELS, WHEN INFLATING THROUGH THE VALVE STEM; KEEP HANDS, ARMS, AND ENTIRE BODY AWAY FROM INFLATING TIRE.
AN EXPLODING TIRE, WHEEL OR BEAD SEATING EQUIPMENT MAY PROPEL UPWARD AND OUTWARD WITH SUFFICIENT FORCE TO CAUSE SERIOUS INJURY OR DEATH TO OPERATOR OR BYSTANDER.

MIS-MATCHED TIRES AND WHEELS

NEVER ATTEMPT TO MOUNT MIS-MATCHED TIRES AND WHEELS. MIS-MATCHED TIRE AND WHEEL COMBINATIONS CAN EXPLODE, CAUSING PERSONAL INJURY OR DEATH TO OPERATOR AND BYSTANDERS. FOR SAFETY, DO NOT ATTEMPT TO MOUNT AND INFLATE MIS-MATCHED TIRES AND WHEELS.

⚠ DANGER

NEVER INCREASE AIR PRESSURE TO EXCEED 40 PSI WHEN ATTEMPTING TO SEAT BEAD. IF OPERATOR IS UNABLE TO OBTAIN BEAD SEAT, SOMETHING IS WRONG. DEFLATE TIRE COMPLETELY, INSPECT TIRE AND WHEEL; CORRECT ANY PROBLEMS FOUND, RE-LUBRICATE BOTH BEADS AND REATTEMPT BEAD SEAL AND SEAT PROCEDURES. FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL

⚠ WARNING

THE INFLATION PRESSURE LIMITER IS PRE-SET AT THE FACTORY AND SHOULD NEED NO ADJUSTMENT. ADJUST ONLY IF PRESSURE EXCEEDS 60 PSI.

Operating a tire changer with a defective, improperly adjusted, or by-passed pressure limiter could result in a tire explosion with severe injury or death to the operator or bystanders. Always be sure that the pressure limiter is operating properly on the machine at all times. Pressure limiter is set at 60 PSI. Any required inflation above 60 PSI should be performed in an inflation chamber/safety cage. A tire explosion may cause personal injury or death to operator or bystanders.

⚠ DANGER

WHEN INFLATING TIRES THAT REQUIRE MORE THAN 60 PSI, ALWAYS USE A SAFETY CAGE AND AIR HOSE WITH A CLIP-ON AIR CHUCK AND IN-LINE VALVE. THE HOSE MUST HAVE ENOUGH LENGTH BETWEEN THE CHUCK AND THE OPERATION/IN-LINE VALVE TO ALLOW THE OPERATOR TO STAND OUT-SIDE THE TRAJECTORY.

SAFETY CAGE

SECTION 17

MAINTENANCE INSTRUCTIONS

Read and follow all the maintenance instructions provided in this manual to keep the machine in good operating condition. Regular inspections and proper maintenance are essential to preventing accidents and injuries. These instructions will help you service the unit. Instructions are for a person with some mechanical ability and training. No attempt has been made to describe all basic steps like how to loosen or tighten fasteners. Basic procedures such as cycling systems and checking operation of the equipment are not fully described since they are described in this manual. Do not attempt to perform work beyond your ability or at which you have no experience. If you need assistance, call an authorized service center or contact the factory.

DAILY

♦ Check the tire pressure gauge function daily, and check the accuracy monthly. Use a pressurized tire and a high quality pressure gauge. If necessary, adjust the dial of the machine gauge. If the gauge is defective, replace it immediately.

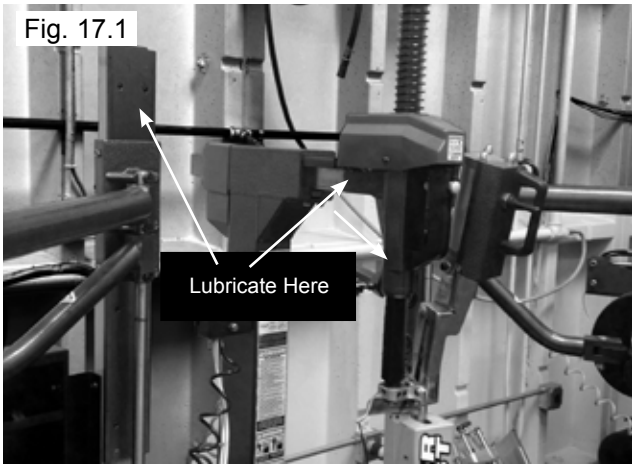
♦ Make sure all fasteners are securely tightened and all guards and covers are in place.

♦ Check for worn, damaged or missing parts including grips and protective covers. Replace them before allowing the unit to be used.

MONTHLY

♦ The vertical and horizontal slides and the helper slides should be cleaned with a vaporizing solvent and then lubricated with chassis grease once a month.
(See Fig. 17.1)

Fig. 17.1



♦ Check adjustment of the mount/demount head monthly.

♦ Check function of the inflation hose pressure limiter/regulator monthly. Always secure/stow the cover if adjustments are made. **The pressure regulator should never be adjusted to exceed 60 PSI.**

♦ The table top, clamps, steel mount/demount head, and other working surfaces should be cleaned with a vaporizing solvent every month.

♦ On a daily basis, inspect the unit and check to be certain that all systems are operating normally. Follow detailed inspection and testing procedures as specified for various components at regular intervals.

♦ Replace any damaged or missing safety decal's. They are available from the factory.

MOUNT/DEMOUNT TOOL HEAD ADJUSTMENT

To adjust tool head lift, adjust locking nut up or down until lift clearance is 1/8" to 3/16". Recheck clearance before replacing cover. (See Fig. 17.2 - 3)

Fig. 17.2

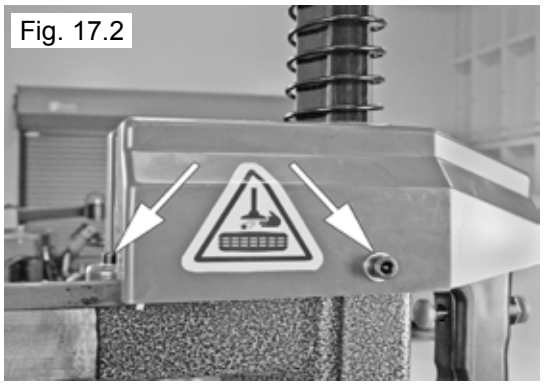
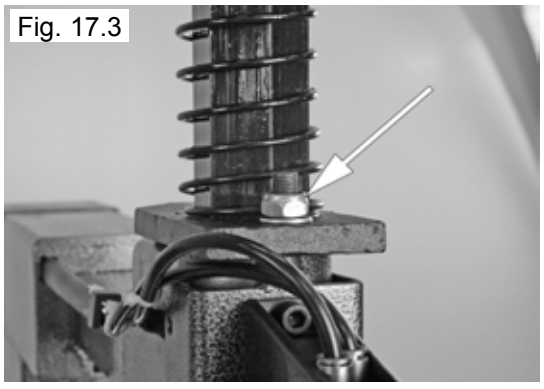


Fig. 17.3



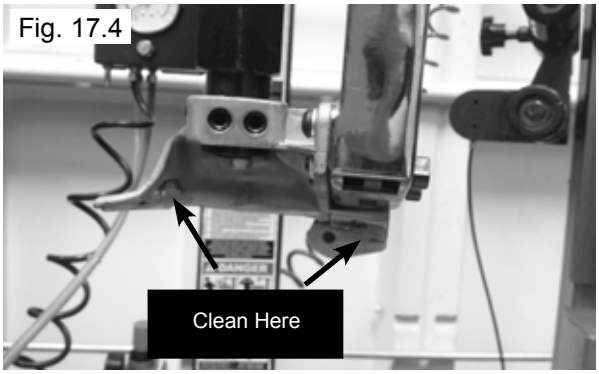
WARNING

DO NOT operate the Tilt Tower unless the tool head is in the LOCKED position. Damage to the machine and /or property or persons can result if warning is not followed.

MOUNT/DEMOUNT HEAD CLEANING

Clean dirt and debris from the mount/demount tool roller with small screw driver or pick. (See Fig. 17.4)

Fig. 17.4

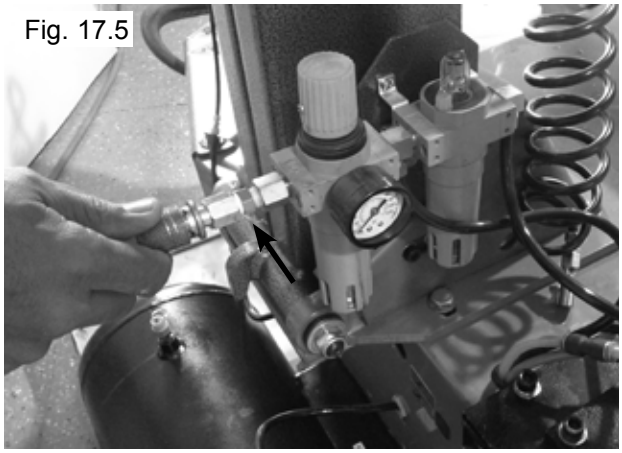


WATER SEPARATOR/LUBRICATOR MAINTENANCE

Check oil and water levels regularly, and perform these maintenance items weekly:

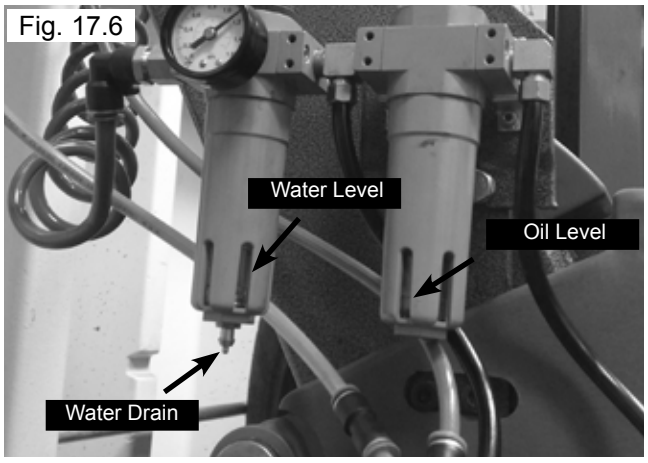
♦ Disconnect air supply to machine. (See Fig. 17.5)

Fig. 17.5



♦ Observe the sight glass on the water separator/filter unit. If water is observed, drain by pressing upwards on the drain plug at the bottom of the reservoir. (See Fig. 17.6)

Fig. 17.6



♦ Add oil to the lubricator if the fluid level is below the middle of the sight glass. Remove the reservoir by turning counter-clockwise and pulling down. Add SAE 10W non-detergent oil or an air tool oil if necessary.

♦ Reconnect the air when service/adjustments are complete.

OILER ADJUSTMENT

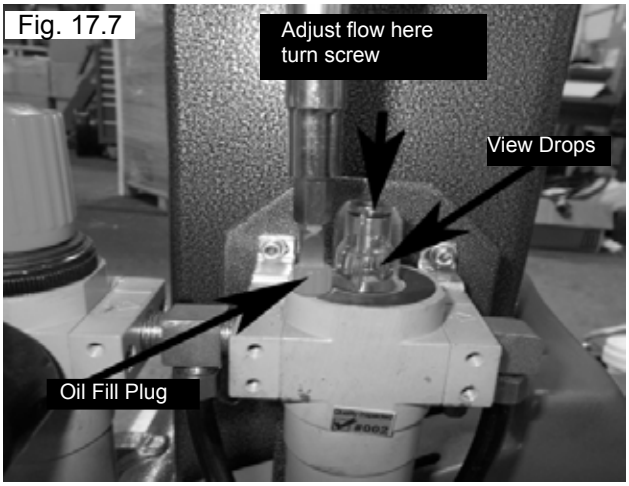
IMPORTANT NOTE:

This adjustment will require two persons to perform.

1. With the Air source connected, depress the Bead Breaker Pedal to operate the Bead Breaker.

2. Observe the site glass and adjust the oil flow of the oiler by turning the Oiler Adjustment Knob so that 2-3 drops of oil drip through the site glass for each operation of the Bead Breaker Pedal. (See Fig 17.7)

Fig. 17.7



(Either reservoir may be removed for cleaning by turning the reservoir counter-clockwise and pulling down.)

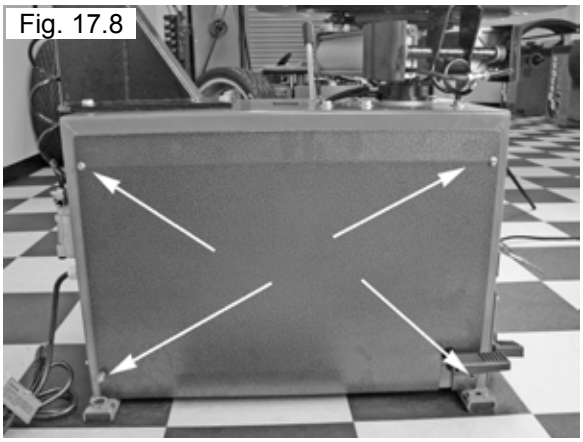
3. Reconnect the air supply when service/adjustments are complete.

TURNTABLE DRIVE BELT INSPECTION / ADJUSTMENT

DANGER. The motor on this machine contains high voltage. Disconnect power at the receptacle before performing any electrical repairs. Secure plug so that it cannot be accidentally plugged in during service.

1. Remove the Side Panel. (See Fig. 17.8)

Fig. 17.8

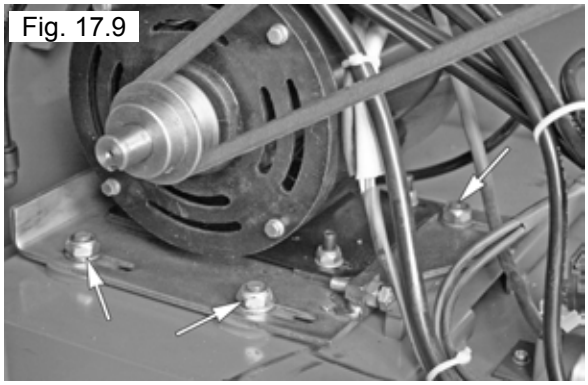


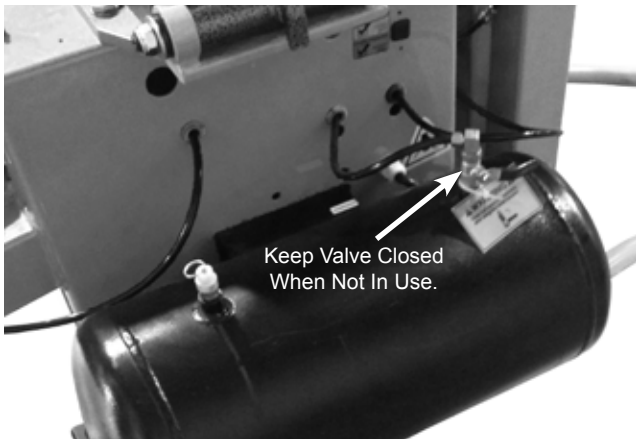
WARNING

***The pressure limiter is pre-set at the factory and should need no adjustment. Adjust only if pressure exceeds 60 psi*. Operating a tire changer with a defective, improperly adjusted, or bypassed pressure limiter could result in a tire explosion with severe injury or death to the operator or bystanders. Always be sure that the pressure limiter is operating properly on the machine at all times. Pressure limiter is set at 60 PSI. Any required inflation above 60 PSI should be performed in an inflation chamber/safety cage. A tire explosion may cause personal injury or death to operator or bystanders.**

2. Loosen the three Motor mounting / adjusting bolts and nuts. (See Fig. 17.9)

Fig. 17.9

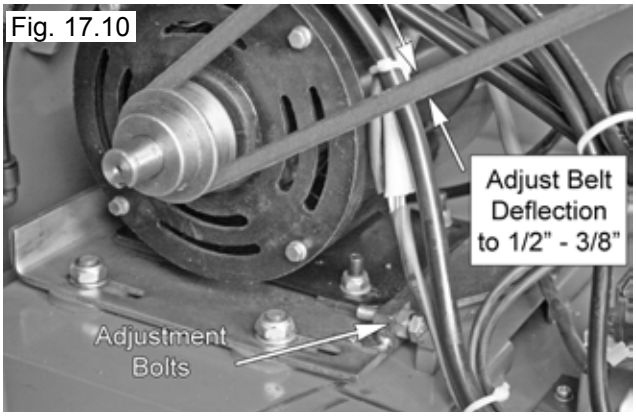




KEEP TURBO BLAST BALL VALVE CLOSED WHEN NOT IN USE.

3. Inspect the Drive Belt for cracking and wear and replace as necessary. Adjust the Belt deflection to 3/8” - 1/2” using the Adjustment Bolt. Tighten all bolts when adjustment is complete. (See Fig. 17.10)

Fig. 17.10



NOTE:
GEARBOX REQUIRES 90 PLUS VISCOSITY GEAR OIL

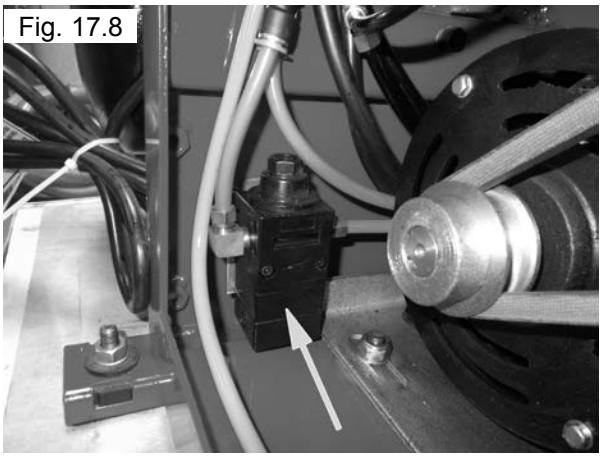
INFLATION PEDAL PRESSURE LIMITER MAINTENANCE

⚠ WARNING

THE PRESSURE LIMITER IS PRE-SET AT THE FACTORY AND SHOULD NEED NO ADJUSTMENT. ADJUST ONLY IF PRESSURE EXCEEDS 60 PSI. Operating a tire changer with a defective, improperly adjusted, or by-passed pressure limiter could result in a tire explosion with severe injury or death to the operator or bystanders. Always be sure that the pressure limiter is operating properly on the machine at all times. Pressure limiter is set at 60 PSI. Any required inflation above 60 PSI should be performed in an inflation chamber/safety cage. A tire explosion may cause personal injury or death to operator or bystanders.

The inflation pedal pressure limiter helps prevent inflation of standard size or larger tires or tubes beyond 60 PSI to minimize risk of explosion. This device is for the safety of the operator and bystanders. Proper operation of the pressure limiter is essential to safe operation of the machine. (See Fig. 17.8)

Fig. 17.8



Check operation of the pressure limiter as follows at least once a month:

1. Remove tires and/or wheels from the machine.

2. Connect the inflation hose to an empty service tank with a pressure gauge (gauge should read 0). Use a certified tank with at least 250 PSI pressure rating. (See Fig. 17.9)

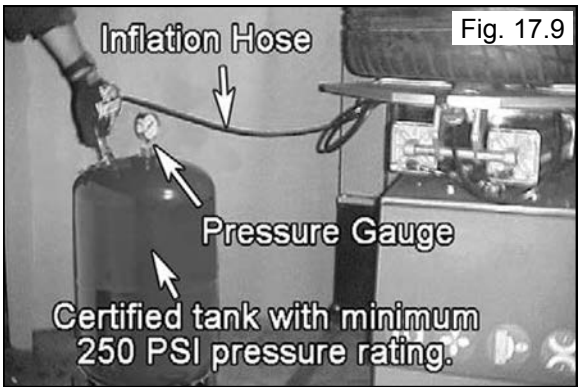


Fig. 17.9

3. Depress inflation pedal to position one to start air flow through the hose and into the tank. Maintain a steady pressure for constant flow.

4. Watch the rising pressure on the tank gauge and the gauge on the machine. As tank pressure reaches 60 PSI, the pressure limiter should stop the air flow automatically. Both gauges should read 60 PSI ± 5 PSI.

5. If the pressure exceeds 60 PSI, adjust the knob on the regulator by lifting the locking cover and turning COUNTERCLOCKWISE. After adjustment is made, secure cover in the locked position.

6. Repeat steps 1-6. Re-adjust if necessary.

7. After pressure limit has been set, check the manual release valve function by pressing the button and releasing pressure from the tank until it reaches 50 PSI. Disconnect inflation hose, and release air inside tank. (See Fig. 17.10)

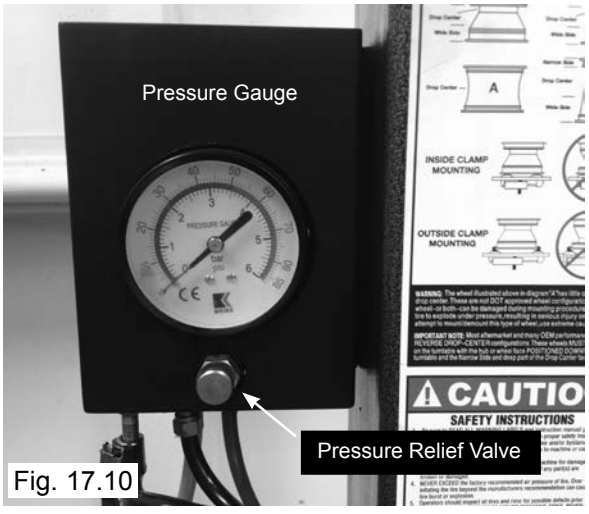


Fig. 17.10

CAUTION

KEEP HANDS CLEAR OF BEAD AREA WHEN INFLATING.

WARNING

BE SURE TO READ ALL WARNING LABELS AND INSTRUCTION MANUAL PRIOR TO OPERATION OF THIS MACHINE.

CAUTION

ALWAYS WEAR SAFETY GLASSES WHEN OPERATING THIS MACHINE.

WARNING

KEEP HANDS CLEAR OF ALL PINCH POINTS

DANGER

STAND CLEAR WHILE INFLATING TIRE. TIRE OR WHEEL FAILURE UNDER PRESSURE MAY CAUSE SERIOUS INJURY OR DEATH.

WARNING

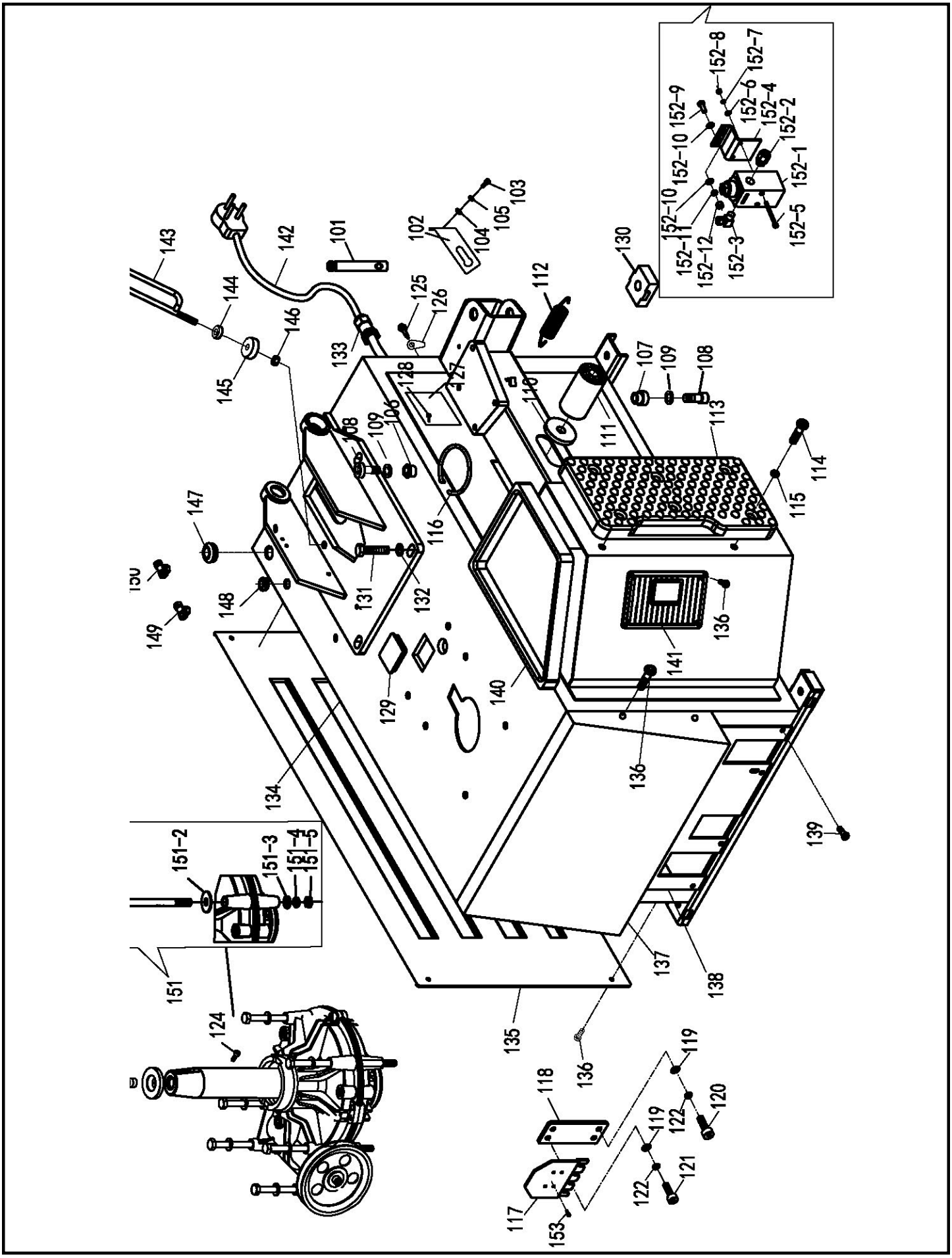
DO NOT WEAR LOOSE CLOTHING, LONG HAIR OR JEWELRY. MOVING PARTS CAN SNAG AND PULL

CAUTION

READ FIRST

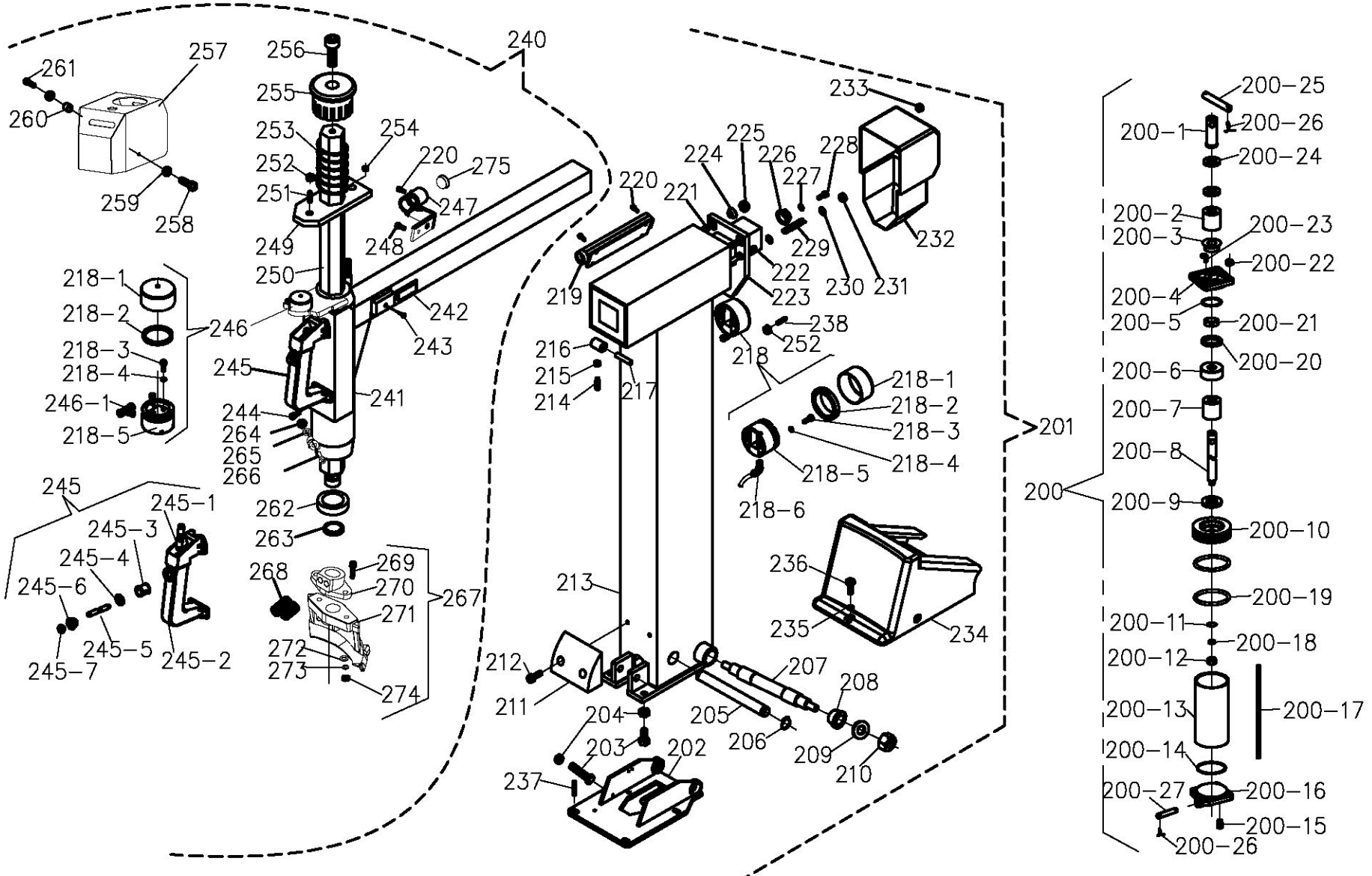
- ✔ Be sure to *READ ALL WARNING LABELS* and instruction manual prior to operation of this machine. Failure to comply with proper safety instructions may lead to serious harm or even death of operator and/or bystanders.
- ✔ Improper operation of this machine may cause damage to machine or cause personal harm or injury.
- ✔ *ALWAYS* wear safety goggles when operating this machine.
- ✔ *KEEP HANDS CLEAR* of all pinch points.
- ✔ Check machine for damaged parts prior to operation. *DO NOT USE MACHINE* if any component is broken or damaged.
- ✔ *NEVER EXCEED* the factory recommended air pressure of tire. Over inflating the tire beyond the manufacturer's recommendation can cause tire burst or explosion.
- ✔ Operators should inspect all tires and rims for possible defects prior to mounting.
- ✔ *ALWAYS INSPECT TIRES BEFORE MOUNTING*. Defective or damaged tires may burst or explode when inflating and may lead to serious harm or injury.
- ✔ *ALWAYS MAKE SURE TIRE SIZE MATCHES RIM SIZE* prior to mounting. Mounting tires on defective or improper rims can cause tire burst or explosion and may lead to serious harm or injury.
- ✔ This machine is not intended to be a restraining devise for exploding tires, tubes, or rims. All operators should take proper precaution to implement safety and to avoid personal injury or harm.
- ✔ *DO NOT* lean over the tire while inflating. *KEEP HANDS AND BODY CLEAR* at all times and as far back as possible during inflation. An exploding tire, rim, or component thereof can cause injury or death to operator and/or bystanders. *REMAIN CLEAR AT ALL TIMES*.
- ✔ To inflate tires, use short bursts while carefully monitoring the pressure, tire, rim, and bead.
- ✔ While seating beads *NEVER EXCEED* 40 p.s.i. If bead does not seat at 40 p.s.i., immediately relieve pressure and check for mismatch of tire, damaged bead and/or other cause.
- ✔ *ALWAYS USE* good quality tire lubricant when servicing tires.

Always Think Safety!


101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
151-2
151-3
151-4
151-5
152-1
152-2
152-3
152-4
152-5
152-6
152-7
152-8
152-9
152-10
152-11
152-12
153

101	Breaker Arm Pin shaft
102	Breaker Arm Pin baffle
103	SHCS M6x16
104	Washer ø6 Flat
105	Washer ø6 Splick Lock
106	Two Plate of Eccentric Sleeve
107	Metal Bushing; I Models
108	SHCS M12x35
109	Washer ø12 Splick Lock
110	Shovel Cushion
111	BB Arm Shock
112	Bead breaker Return Spring
113	Wheel Support Pad
114	Cross Recessed Pan Head Screw
115	Washer; Ø6
116	Soap Bucket Retaining Ring
117	Upper Air/Oil Reg Bracket
118	Lower Air/Oil Reg Bracket
119	Washer Ø8 Flat
120	SHCS M8x20
121	SHCS M8x16
122	Washer ø8 Splick Lock
123	Hexagon Socket Head Screw M16x40
124	SHCS M6x10
125	STS ST5.5x25
126	Earth Wire Logo
127	Scutcheon
128	Cup Head Rivet
129	Side Wall
130	Plastic Foot Pad; I Models
131	Hexagon Headed Bolt
132	Washer
133	Waterproof Via Coil Nut M20
134	Chassis Weldment
135	Side Cover
136	Cross Slotted Large Flat Head Screw M6x16
137	Foot pedal hood
138	Chassis front board
139	Socket head cap screw M6x12
140	Tool Tray
141	Crowbar mat
142	Power Cord without plug

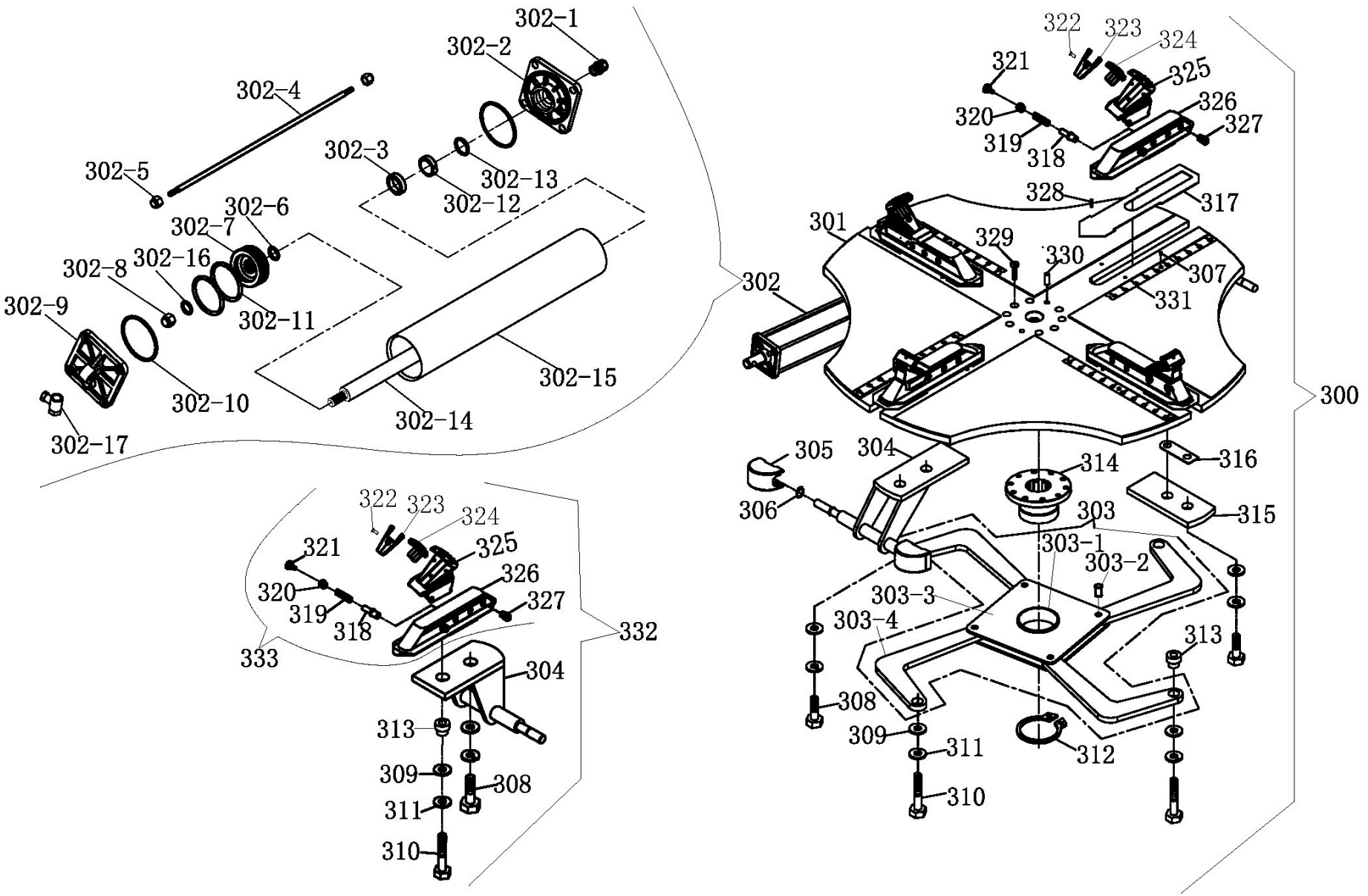
143	Post limit lever
144	Washer ø8
145	Tilt Tower Bushing
146	Nut M8
147	Cable holder ø16
148	Cable holder ø12
149	Fitting; Tee ø8-ø8-ø6
150	Fitting; Tee ø8-ø8-ø8
151	Worm housing bolts
151-1	Hexagon headed bolt M10x160
151-2	Large side pads ø10
151-3	Washer ø10
151-4	Washer ø10 Splick Lock
151-5	Nut M10
152	Pneumatic valve department
152-1	Full flow inflation regulator
152-2	Fitting; Ø8-G1/4″
152-3	Fitting; Ø8-G1/4″
152-4	Air pressure limiting valve bracket
152-5	SHCS M4x50
152-6	Washer ø4
152-7	Washer ø4 Splick lock
152-8	Nut M4
152-9	HHB M6X20
152-10	Washer ø6
152-11	Washer ø6 Splick lock
152-12	Nut M6
153	SHCS M4x8


240
201
200
261
260
257
259
258
256
255
253
252
251
249
250
254
220
275
247
248
246
218-1
218-2
218-3
218-4
246-1
218-5
242
243
245
241
244
264
265
266
262
263
245
245-1
245-3
245-4
245-6
245-7
245-5
245-2
268
269
270
271
272
273
274
267
219
220
221
224
225
226
227
228
233
229
230
231
232
222
223
238
252
218
216
215
214
217
218-1
218-2
218-3
218-4
218-5
218-6
213
236
235
234
212
211
207
208
205
206
209
210
204
203
202
237
200-25
200-26
200-1
200-24
200-2
200-3
200-23
200-22
200-4
200-5
200-21
200-20
200-6
200-7
200-8
200-9
200-10
200-19
200-11
200-18
200-12
200-13
200-17
200-14
200-27
200-16
200-15
200-26

200	Tilt Back Cylinder
200-1	Tilt Cylinder Connector
200-2	Tilt Tower Rubber Space
200-3	Rubber Shock Bushing
200-4	Tilt Tower Cylinder Front Plate
200-5	O-Ring 25 x 3.1
200-6	Tilt Tower Rubber Spacer Cover
200-7	Tilt Tower Rubber Spacer
200-8	Piston Rod
200-9	Washer
200-10	Small Cylinder Piston;
200-11	O-Ring 16 x 2.4; I Models
200-12	Nut M12
200-13	Tilt Tower Cylinder
200-14	O-Ring 75 x 2.65
200-15	Fitting; 8 mm 1/8"
200-16	Tilt Tower Cylinder Rear Plate
200-17	Tilt Back Cylinder Bolt
200-18	Washer ø12 Splick lock
200-19	O-Ring 75 x 5.7; I Models
200-20	Y-Ring ø32x20x6
200-21	Jaw Clamp Cylinder Wear Strip ø20x4x2
200-22	Hex thin nuts M8
200-23	Fitting; G1/8″ Ø8 90°
200-24	Washer
200-25	Tilt Tower Cylinder Upper Pin; I Models
200-26	Pin ø4x28
200-27	Tilt Tower Cylinder Lower Pin; I Models
201	Tilt-back Tower Weldment
202	Vertical Arm Base
203	Hex thin nuts M10
204	HHB M10x30
205	Vertical limit shaft
206	Snap Ring, ø20
207	Tilt Tower Pivot Pin
208	Tapered Metal Bushing; I Models
209	Adjustable Pad
210	Lock Nut M14
211	Inner Tilt Tower Cover; I Models
212	SHCS M6 x 20
213	Tilt-back Tower Weldment

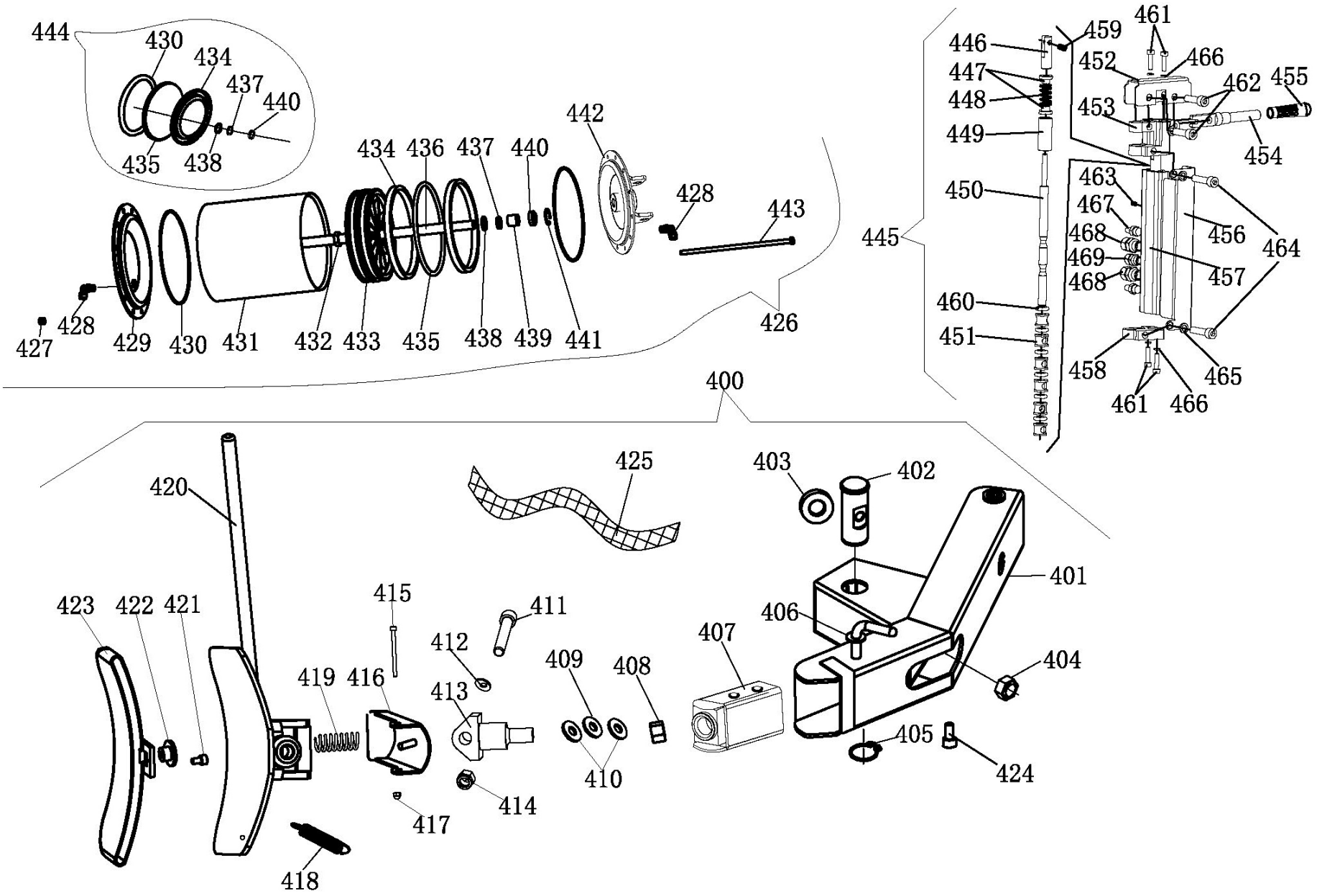
214	Hexagonal cylindrical side screw set M8x25
215	Nut M8
216	Horizontal Arm Roller; I Models
217	Horizontal Arm Roller Pin; I Models ø8x40
218	Horizontal Arm Lock Cylinder
218-1	Arm Lock Cylinder Piston
218-2	Y-Ring ø60x47x7; I Models
218-3	SHCS M6x35
218-4	O-Ring ø9x2.4; I Models
218-5	Pneumatic control valve base
218-6	Fitting; G1/8″ ø6 90°
219	Hosting support
220	SHCS M4x6
221	Threaded Rod
222	Threaded Rod
223	Horizontal Shaft Locking Plate; I Models
224	Horizontal Slide Stop; I Models
225	Nut; M10
226	Rear Lock Plate Bushing; I Models
227	Washer ø6 Splick lock
228	SHCS M6x16
229	Rear Lock Plate Spring; I Models
230	Washer; Ø8 Flat
231	Nut M8
232	Real Lock Cylinder Cover; I Models
233	Nut; M18
234	Inner Tilt Tower Cover; I Models
235	Washer ø6
236	Cross recessed pan head screws M6x20
237	Pin; 6 x 40; I Models
238	Inner hexgon set screw M12x25
240	Horizontal Slides
241	Horizontal Arm Weldment
242	Tilt Tower Rubber Shock; I Models
243	Cross recessed head tapping screw M4.2x12
244	SHCS M5x12
245	Locking Valve Handle Assy; I Models

245-1	Fitting; 6 mm 1/8 Straight
245-2	Locking Valve Handle; I Models
245-3	Locking Valve O-Ring Spacer; I Models
245-4	O-Ring 8 x 2.65
245-5	Locking Valve Shaft; I Models
245-6	Locking Valve Metal Spacer; I Models
245-7	Locking Valve Button; I Models
246	Vertical Arm Lock Cylinder Assy
246-1	Fitting; Tee ø8
247	Fixation Frame
248	SHCS M6x16
249	Vert Shaft Locking Plate
250	Hex Shaf
251	Inner hexgon set screw M12x20
252	Nut M12
253	Hex Shaft Spring; B & I Models
254	Nut; M10
255	Hex Shaft Cap; R-26EX / I Models
256	SHCS M10x30
257	Weld assembly with lock cover
258	SHCS M6x12
259	Washer; Ø6 Flat
260	Hex Shaft Lock Cover Bushing; I Models
261	SHCS M6x20
262	Mount / Demount Head Bushing; I Models
263	Duckhead Retaining Washer; I Models
264	Luck nut M8
265	Washer; ø8
266	SHCS M8x35
267	Plastic bird head assembly
268	Inner hexagon set screw M12x16
269	SHCS M8x40
270	Plastic duckhead flange
271	Plastic duckhead A
272	Washer; ø8 flat
273	Washer; ø8 spring


302-1
302-2
302-4
302-3
302-5
302-13
302-12
302-6
302-7
302-8
302-16
302-9
302-11
302-10
302-15
302-14
302-17
302
322
323
324
321
325
326
320
327
319
318
328
317
301
329
330
307
331
300
305
304
316
306
314
303
315
303-1
303-2
303-3
303-4
313
308
309
311
312
310
332
333

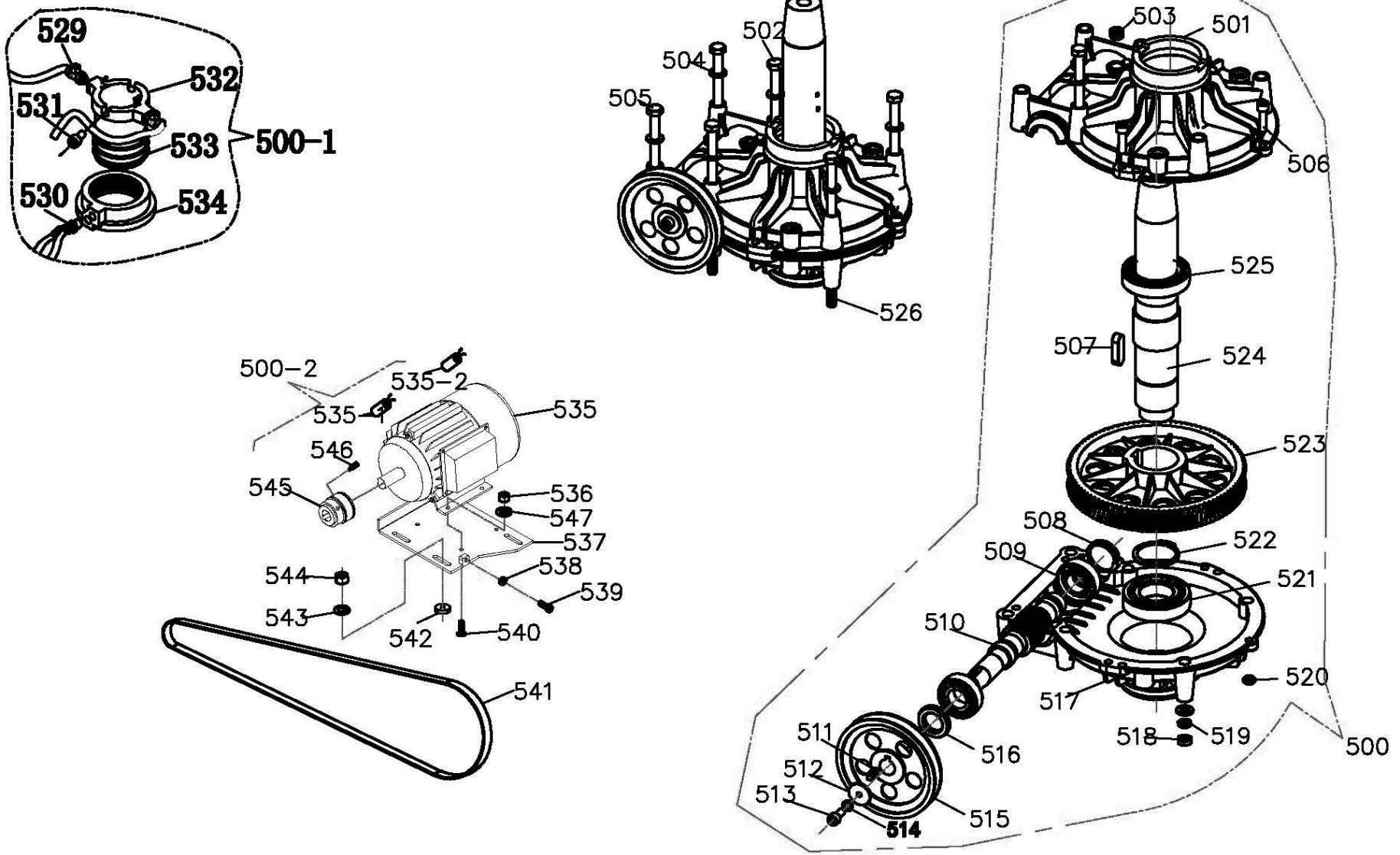
300	Complete Turntable Assy
301	Spend working plate
302	Jaw clamp cylinder
302-1	Fitting; 1/8 8 mm Straight
302-2	Small Front Cylinder Cover; I Models
302-3	Y-ring ø32x20x6
302-4	Double-headed bolt
302-5	Nut M8
302-6	O-ring ø16x2.4
302-7	Cylinder Piston
302-8	Locking Nut M12
302-9	Small Rear Cylinder Cover; I Models
302-10	O-ring ø75x2.65
302-11	O-ring ø75x5.7
302-12	Jaw Clamp Cylinder Wear Strip; I Models ø20x4x2
302-13	O-ring ø25x3.1
302-14	Jaw Clamp Cylinder Rod
302-15	Jaw Clamp Cylinder Bod
302-16	Washer ø12
302-17	Banjo bolt G1/8" Ø8 Single
303	Square Turntable Assy
303-1	Square Turntable Spacer; I Models
303-2	Square Turntable Press Pim; I Models
303-3	Square Turntable
303-4	Square Turntable Link
304	Jaw clamp cyl bracket
305	Small Cylinder Cover; I Models
306	Snap ring ø12
307	Turntable Ruler Screw; R30xLT M4x6
308	HHB M12x30
309	Washer ø12
310	HHB M12x50
311	Washer ø12 Splick lock
312	Seeger ring ø65
313	Spacer; I Models
314	Covers of key
315	Slide guard board
316	Slide Shim Adjustment; I Models
317	Jaw Clamp Slide
318	Jaw Clamp Inner Adjustment Pin
319	Jaw Clamp Pin Spring
320	Jaw Clamp Inner Adjustment Knob
321	Jaw Clamp Locking Pin

322	Stainless steel HHB M4X10
323	Plastic mattress for jaw clamp
324	Rubber blanket for jaw clamp
325	Jaw Clamp
326	Jaw Clamp Support
327	Jaw Clamp Fixed Pin
328	Pin ø4x16
329	SHCS M8x16
330	Pin ø8x20
331	Turntable Ruler
332	Slide block assy
333	Turntable on the assembly


444
430
434
437
440
435
438
442
434
436
437
440
428
443
427
428
429
430
431
432
433
435
438
439
441
426
445
461
459
446
452
466
447
462
455
448
453
454
449
463
450
467
456
464
468
469
457
468
460
451
458
465
461
466
400
425
403
402
420
401
423
422
421
415
411
406
412
407
404
419
416
409
408
413
405
424
410
414
417
418

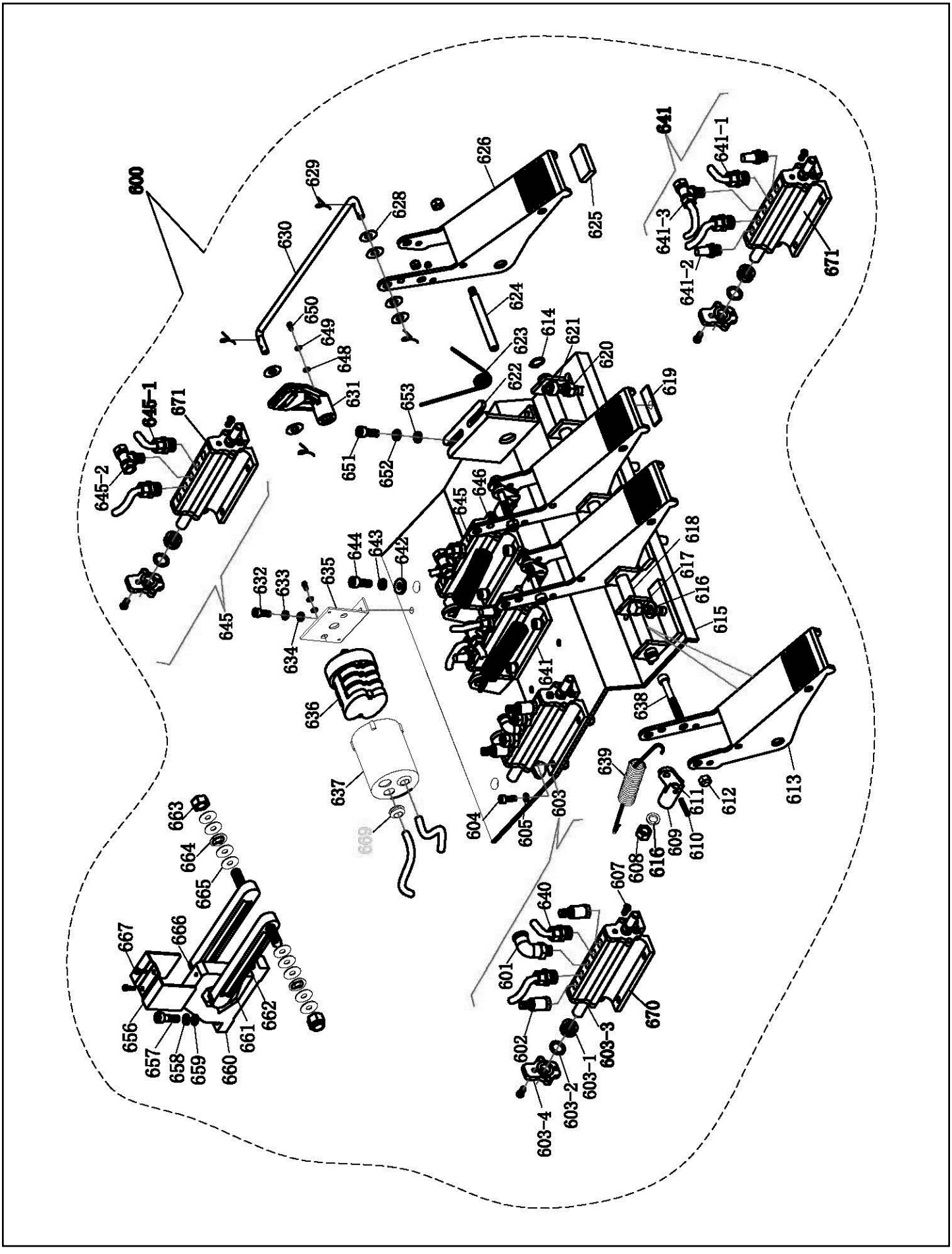
400	Shovel frame part
401	Bead Breaker Arm
402	Bead Breaker Arm Pivot Pin; I Models
403	Locating pad
404	Locking Nut M16
405	Seeger ring ø35
406	Bead breaker retaining pin
407	Bead breaker arm slidecover weld assy
408	Locking Nut M16
409	Curved spring washers ø16
410	Washer ø16
411	SHCS M14x95
412	Curved spring washers ø16
413	Bead Breaker Knuckle
414	Locking Nut M14
415	SHCS M8x85
416	Reseat installed and welded
417	Nut M8
418	Shovel plate tension spring
419	Spring
420	Bead Breaker Blade
421	SHCS M6x10
422	Contains Busing
423	Board the seat
424	SHCS M6x16
425	PET
426	Bead Breaker Cylinder
427	Locking Nut M8
428	Fitting; G1/4″ Ø10 90°
429	Rear end cover
430	O-ring ø193x5.7
431	Aluminum cylinder block
432	Nut M18 - Thin threaded (A)&(B)
433	BB Cylinder Pistor; I Models
434	Y-Ring 200 x 12 x 6 mm
435	Guide Ring 189x200x4
436	Bead Breaker Cylinder Rod
437	Y-Ring 25x20x4; I Models
438	O-Ring 25 x 3.1; I Models
439	Oilless bearing ø23x20x20
440	Seal ring Ø30x20x7
441	Type I Hole With Elastic Ring ø32
442	Before the end cover compound

443	HHB
444	Aluminum cylinder seal hair accessories
445	Bead Breaker Blade Valve Assy
446	Pull rod
447	Spring spacer
448	Spring
449	Spacer bush
450	Valve rod
451	Air Valve O-Ring Spacer; I Models
452	Upper cover for handle bead break
453	Upper cover for valve body
454	Spanner
455	Clamp handle cover
456	Lower cover for handle bead break
457	Valve body
458	Lower cover for valve body
459	Inner hexangular set screw M6x12
460	O-ring ø17x4
461	SHCS M5x20
462	SHCS M8x25
463	Six pyramid end screw set M5x6
464	SHCS M8x35
465	Washer ø8 Splick lock
466	Washer ø5 Splick lock
467	Sliencer G1/4″
468	Fitting Ø10-G1/4″
469	Fitting Ø8-G1/4″


529
532
531
533
500-1
530
534
502
504
505
526
503
501
506
525
507
524
523
500-2
535-2
535-1
535
546
545
536
547
537
538
544
539
543
542
540
541
508
522
509
521
510
520
517
511
516
518
519
500
512
513
514
515

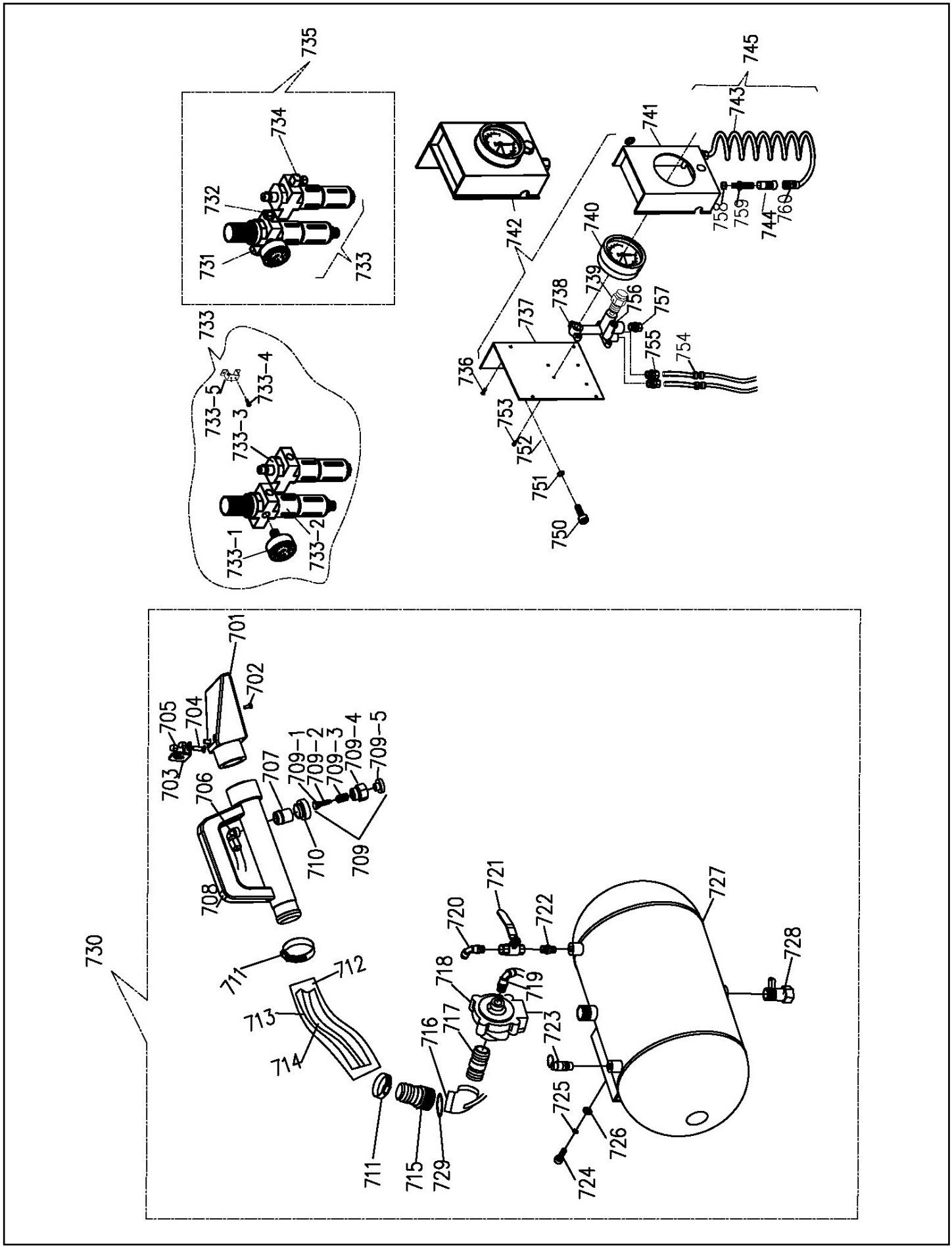
500	Transmission Assy
500-1	Rotary Joint Block; I Models
500-2	Variable frequency motor/hanger assy
501	Gearbox front flange
502	HHB M10 x 200
503	Oil plug
504	Washer Ø10
505	HHB M10 x180
506	SHCS M8x30
507	Transmission key 14 x9 x40
508	Oil block
509	Cone roller bearing
510	Gear stud
511	Tab 6x6x20
512	Gear stud pad
513	SHCS M8x16
514	Washer ø8 Splick lock
515	Big size belt pulley
516	Oil seal Ø45x25x10
517	Transmission Back Flange
518	Nut M10
519	Washer ø10 Splick lock
520	Nut M8
521	Bering
522	Seeger ring ø50
523	Helical gear
524	Spline shaft
525	Bearing 6010
526	HHB M10x170
529	Fitting ø8-ø8-G1/8″
530	Fitting G1/8″ ø8 Straight
531	Inner hexangular set screw M6x20
532	Rotary Joint Block Inner Piece; I Models
533	O-ring ø60x2.75
534	Rotary Joint Block Outer Piece; I Models
535	Electric Motor; D/I Models
535-1	Starting capacitance
535-2	Operation capacitance
536	Lucknut
537	Motor base unit weldment
538	Nut M8
539	HHB M8x40

540	Hexagon socket head screw M8x30
541	V Belt 1168
542	Rubber Washer
543	Washer Ø10 Flat
544	Locking Nut M10
545	Motor Pulley; I Models
546	Inner hexangular set screw M8x16
547	Washer Ø8 Flat
548	Electrical line
549	Rotary valve fixed set of device configuration diagram


600
601
602
603
603-1
603-2
603-3
603-4
604
605
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
628
629
630
631
632
633
634
635
636
637
638
639
640
641
641-1
641-2
641-3
642
643
644
645
645-1
645-2
646
648
649
650
651
652
653
656
657
658
659
660
661
662
663
664
665
666
667
669
670
671

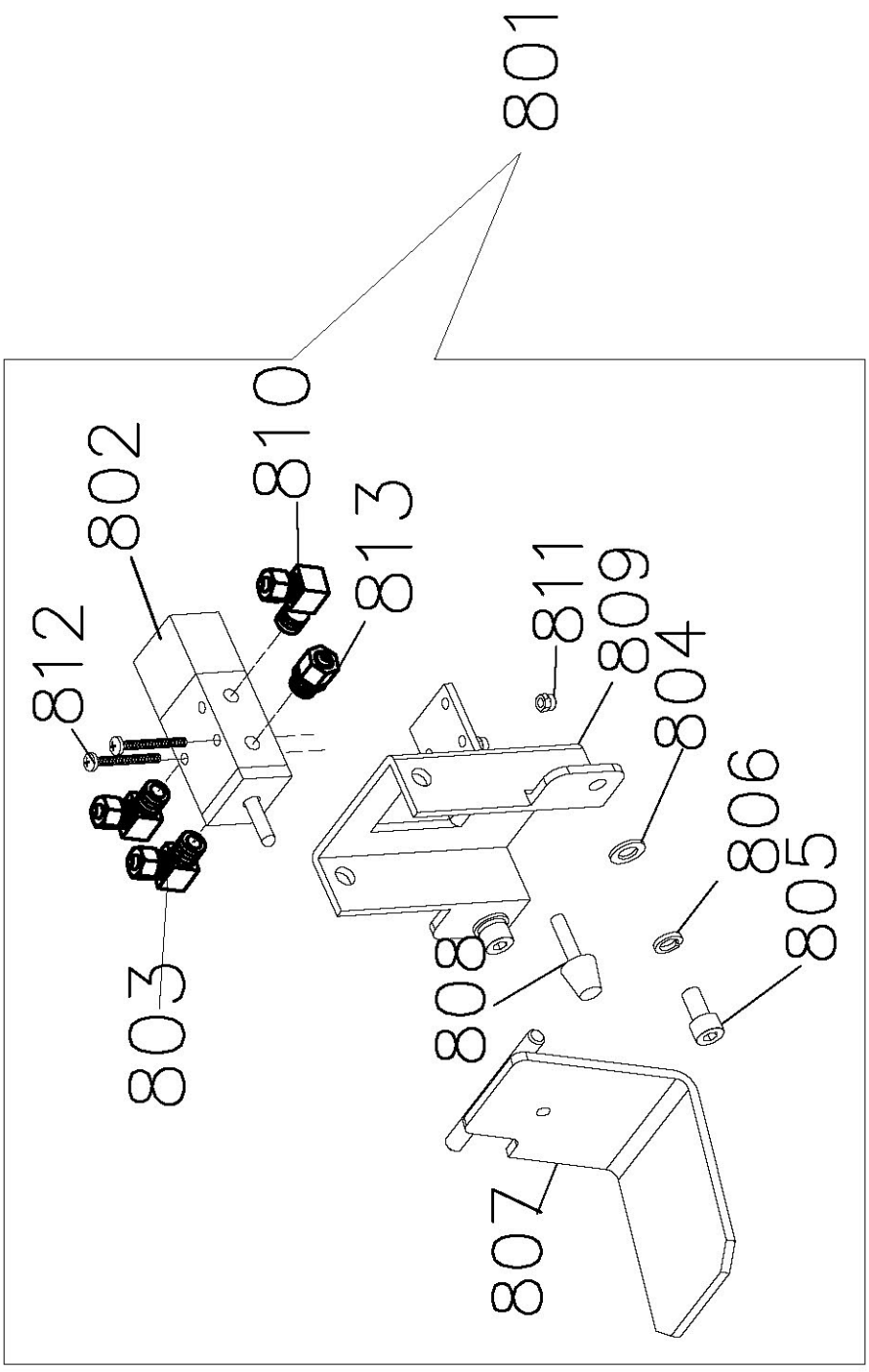
600	Four foot-pedals assy
601	Lock nut Elbow 1/8″ ø8
602	Adjustable silencer
603	Small valve assembly assembly
603-1	Air Valve skeleton; I Models
603-2	O ring
603-3	Cylinder valve stem
603-4	Small valve end cover
604	Hexagon socket head cap screws M6x12
605	Spacer Ø6
607	Cross recessed pan head screw M4x10
608	Hexagon nut M8
609	Small air valve sub
610	Cylindrical pin
611	Small valve pull plate
612	Locking Nut M6
613	Foot Pedal (Right); I Models
614	Snap ring ø12
615	Base board
616	Washer ø8 Splick lock Ø8
617	HHB M8x16
618	Foot Pedal Shaft; I Models
619	Control system adjusting pad
620	Hexagon nut M8
621	Hexagon socket head cap screws M8X50
622	Torsion Splick lock Bracket; I Models
623	Torsional spring
624	Switch block stick
625	Rubber
626	Foot Pedal (Left); I Models
628	Washer; M6 x 24mm Flat Ø6
629	Cotter pin 3.2x25
630	Switch lever
631	Switch fork
632	Hexagon socket head cap screws
633	Spring washer
634	Flat washer
635	Reverse switch bracket
636	Reverse switch 220V/40A
637	Big switch cover
638	Hexagon socket cap screws
639	Control plate spring

640	Lock nut Elbow G1/8″ø8
641	Working disc small air valve assembly
641-1	Lock nut G1/4″ ø8
641-2	Copper silencer G1/4″
641-3	Equal tee G1/4″ ø8
642	Big washer Ø8
643	Spring washer Ø8
644	Hexagon socket cap screws M8x20
645	Assembly of large cylinder small air valve
645-1	Lock nut G1/4″ ø10
645-2	Equal tee ø8
646	Cylinder locating sleeve
648	Plain washer Ø5
649	Spring washer Ø5
650	Cross recess pan head screw M5x16
651	Hexagon socket cap screws M6x16
652	Spring washer Ø6
653	Plain washer Ø6
656	Convex wheel cover
657	Hexagon socket cap screws M6x20
658	spring washer Ø6
659	Plain washer Ø6
660	Foot Pedal Cam; I Models
661	Foot Pedal Cam Leaf Spring (Left); I Models
662	Foot Pedal Cam Leaf Spring (Right); I Models
663	Hexagon Lock nut M8
664	Curved spring washers ø8
665	Washer Ø8 Flat
666	Foot Pedal Cam Link; I Models
667	Cross recessed pan head screw M3x10
669	Coil
670	Small gas valve
671	Small gas valve

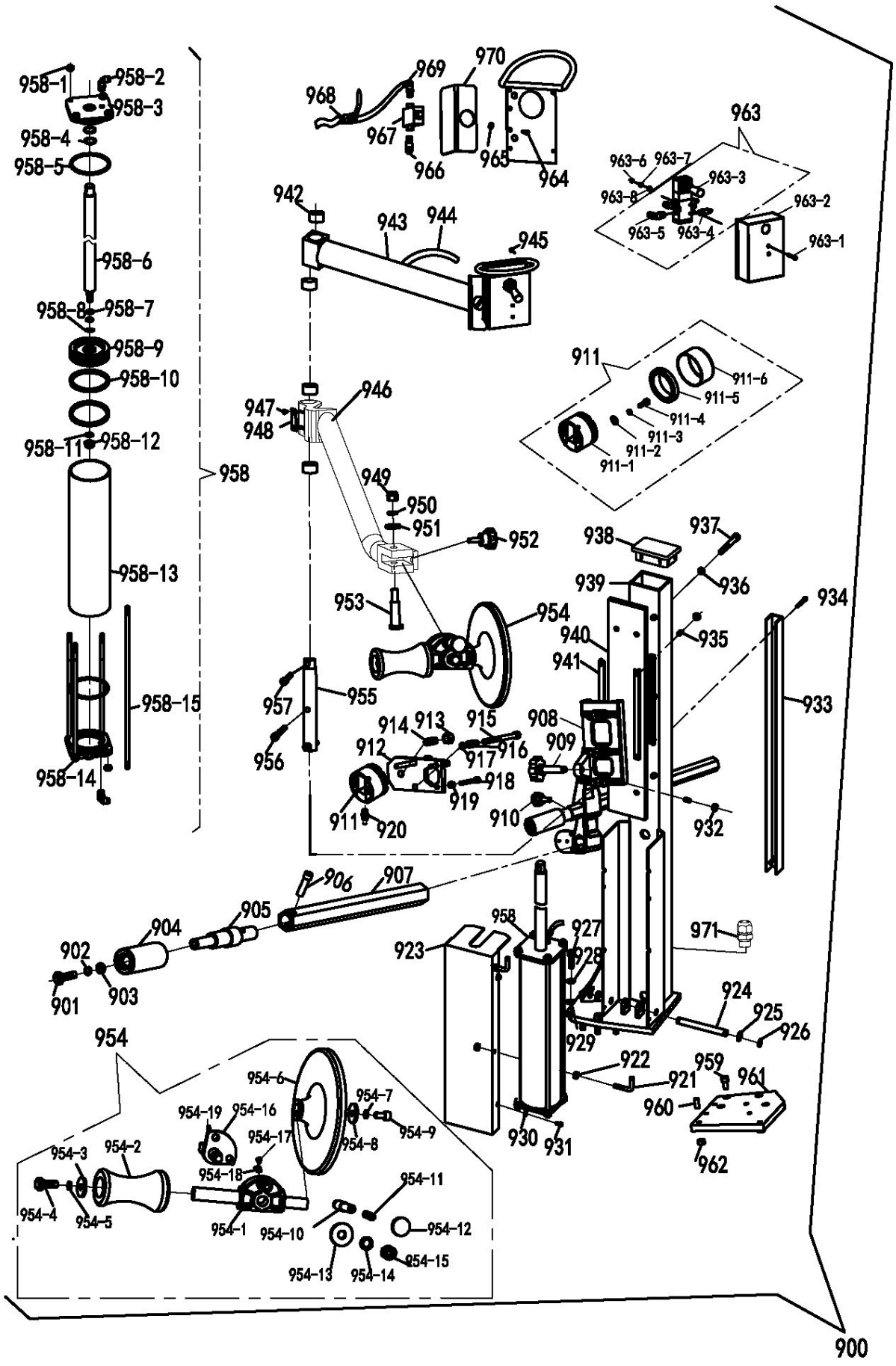

730
701
702
703
704
705
706
707
708
709
709-1
709-2
709-3
709-4
709-5
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
733
733-1
733-2
733-3
733-4
733-5
735
731
732
734
736
737
738
739
740
741
742
743
744
745
750
751
752
753
754
755
756
757
758
759
760

701	Blasting nozzle upper cover
702	Cross recessed pan head tapping screws
703	Hook
704	Cross recessed pan head screw
705	Acorn nut
706	Lock Nut
707	Butt joint G1/4"-G1/8"
708	BB Blade handle cover
709	Vent valve
709-1	O-ring
709-2	Piston
709-3	Spring
709-4	Valve body
709-5	Button
710	Lock Nut
711	Stainless Steel tube button
712	Nylon fabric jacket
713	PVC Steel Wire Tube
714	PU straight pipe
715	Blasting Valve joint
716	Elbow
717	Butt joint 1"
718	Blasting Valve
719	Elbow G1/4 Ø6 Single
720	Lock Nut Fitting
721	Ball valve
722	Screwed nipple; G1/4″-G1/4″
723	Pressure Release Valve; I Models
724	SHCS M8x25
725	Pad Ø8
718	Blasting Valve 1"
719	Elbow G1/4"-ø6
720	Lock Nut Fitting; G1/4″ Ø8 90°
721	Ball valve
722	Screwed nipple; G1/4″-G1/4″
723	Pressure Release Valve; I Models
724	Hexagon socket-head cap screws
725	Pad Ø8
726	Flat Pad Ø8
727	Air Tank
728	Mother Baby Valve
729	O Ring
730	Blasting Part

728	Mother Baby Valve
729	O Ring
730	Blasting Part
731	Extension piecesequal
732	1/4" x Ø 8 mm Tee
733	Oil and water separator FRL
733-1	Barometer
733-2	Air Filter Cup
733-3	Oiler Cup
733-4	Hexagon socket head cap
733-5	Oil mist holder
734	Lock Nut Fitting; G1/4″ Ø8 90°
735	Pneumatic FRL
736	Hexagon socket head cap screws M3x10
737	Inflatable table mountain
738	Separate Air Head Skeleton
739	Vent valve
740	Pressure gauge with bottom connection
741	Inflatable table cover
742	522W Gas meter assembly
743	Spiral coil
744	Spiral tube assembly
745	Always open the air pressure head
746	Quick plug straight
747	Straight bore
748	Plug
749	Air Fitting Spacer; I Models
750	SHCS M6x20
751	Spring washer
752	Flat washer
753	Hexagon socket head cap screws M3x10
754	SHCS M4x12
755	Spring washer
756	Flat washer
757	Oil mist holder
758	1 Type hexagon nut
759	Air tube Hook
760	Straight bore


801
810
802
813
812
811
809
804
806
805
803
808
807

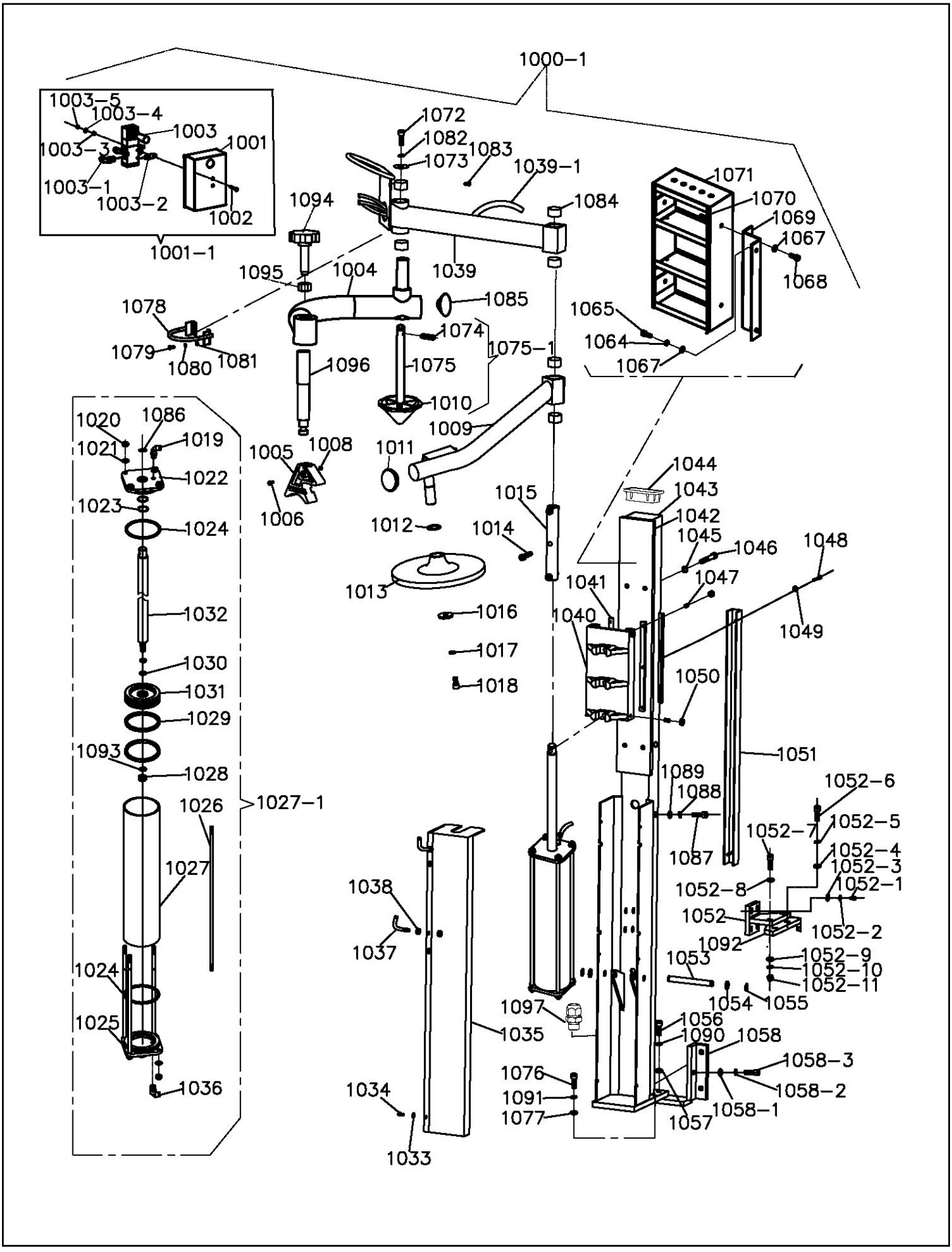
801	Lateral pedal assembly (Inflation/pulse)
802	Two-position, four-way valve
803	Fitting; G1/4″ø8 90°
804	Washer ø4 Flat
805	SHCS M8x16
806	Washer ø5 Splick lock
807	Inflation foot pedal weldment
808	Inflation foot pedal limit block
809	Inflation foot pedal support
810	Lock Nut Fitting; G1/4″ ø8 90°
811	1 Type Non-metal Insert Hexagonal Lock Nut G1/4" ø8
812	Cross recessed pan head screw M4x35
813	Lock Nut Fitting G1/4" ø8 180°


958-1
958-2
958-3
958-4
958-5
958-6
958-7
958-8
958-9
958-10
958-11
958-12
958-13
958-14
958-15
958
968
969
970
967
966
965
964
963
963-6
963-7
963-3
963-8
963-2
963-5
963-4
963-1
942
943
944
945
911
911-6
911-5
911-4
911-3
911-2
911-1
947
948
946
949
950
951
952
953
954
957
955
956
914
913
915
908
912
917
916
909
918
919
911
920
910
938
937
939
936
934
940
935
941
933
932
907
906
905
904
902
903
901
958
927
928
923
971
924
925
926
929
922
921
959
961
960
962
930
931
954
954-6
954-7
954-19
954-16
954-9
954-8
954-17
954-3
954-2
954-18
954-4
954-5
954-1
954-10
954-11
954-12
954-13
954-14
954-15
900

900	Power hand part right
901	HHB M10x20
902	Washer ø10 Splick lock
903	Tire pressure bar mat
904	Tire pressure roller
905	Tire pressure support
906	Master pin
907	Tie down block
908	The sliding body compound piece
909	Large Knob
910	Medium Knob
911	Lock cylinder assembly
912	Locking plate
913	Nut M12
914	Inner hexangular set screw M12x30
915	SHCS M8x100
916	pressure spring
917	Washer Ø8 Flat
918	SHCS M6x50
919	Locking Nut M6
920	Fitting; G1/4″ ø8
921	Turbo Blast Hook; I Models
922	Nut M8
923	Left Assist Tower Cyl Cover; R23/26 (I)
924	Assist Tower Lower Pin; R23/26 (I)
925	Washer Ø12 Flat
926	Snap ring ø12
927	SHCS M10x30
928	Washer ø10 Splick lock
929	Washer Ø10 Flat
930	Washer Ø6 Flat
931	SHCS M6x12
932	Nut M8
933	Gas hood
934	SHCS M6x40
935	Inner hexangular set screw M8x16
936	Washer ø10 Splick lock
937	SHCS M10x75
938	Assist Tower Top Plug
939	Left Assist Tower Weldment
940	Slide Guide

941	Assist Tower Plastic Slide; I Models
942	Bearing B3025
943	Left Assist Arm, Plastic Disk
944	Metal Braided Hose Cover
945	Cross recessed head tapping screw 4.2x13
946	Left Assist Arm, Plastic Disk
947	Cross recessed countersunk head screw M4×6
948	Top silk gasket
949	Locking Nut M12
950	Washer; M12 Flat
951	Pin pad
952	Plum blossom handle M10
953	Locating pin
954	Inversion plate assembly
955	Assist Arm Connecting Link
956	Inner hexangular set screw M10x50
957	Inner hexangular set screw M10x45
958	Booster cylinder assembly
959	Inner hexangular set screw M10x20
960	Hexagonal cylindrical side screw set 10x20
961	Power adapter plate
962	Nut M10
963	Assist Arm Valve Control Assy
964	SHCS M5x12
965	Nut M5
966	Fitting; G1/8″ Ø4 90°
967	Roller Lock Air Valve;
968	Fitting; Tee ø6-ø6-ø6
969	Fitting; G1/8″ ø6 90°
970	Locking valve plate
971	Union ø8-ø6
911-1	Gas valve seat
911-2	Flat gasket Ø6
911-3	O-Ring ø7x1.9
911-4	socket head cap screw M6x40
911-5	Arm Lock Cylinder Seal; ø60x47x7
911-6	Arm Lock Cylinder Piston;
954-1	Transfer plate
954-2	Pressure roller

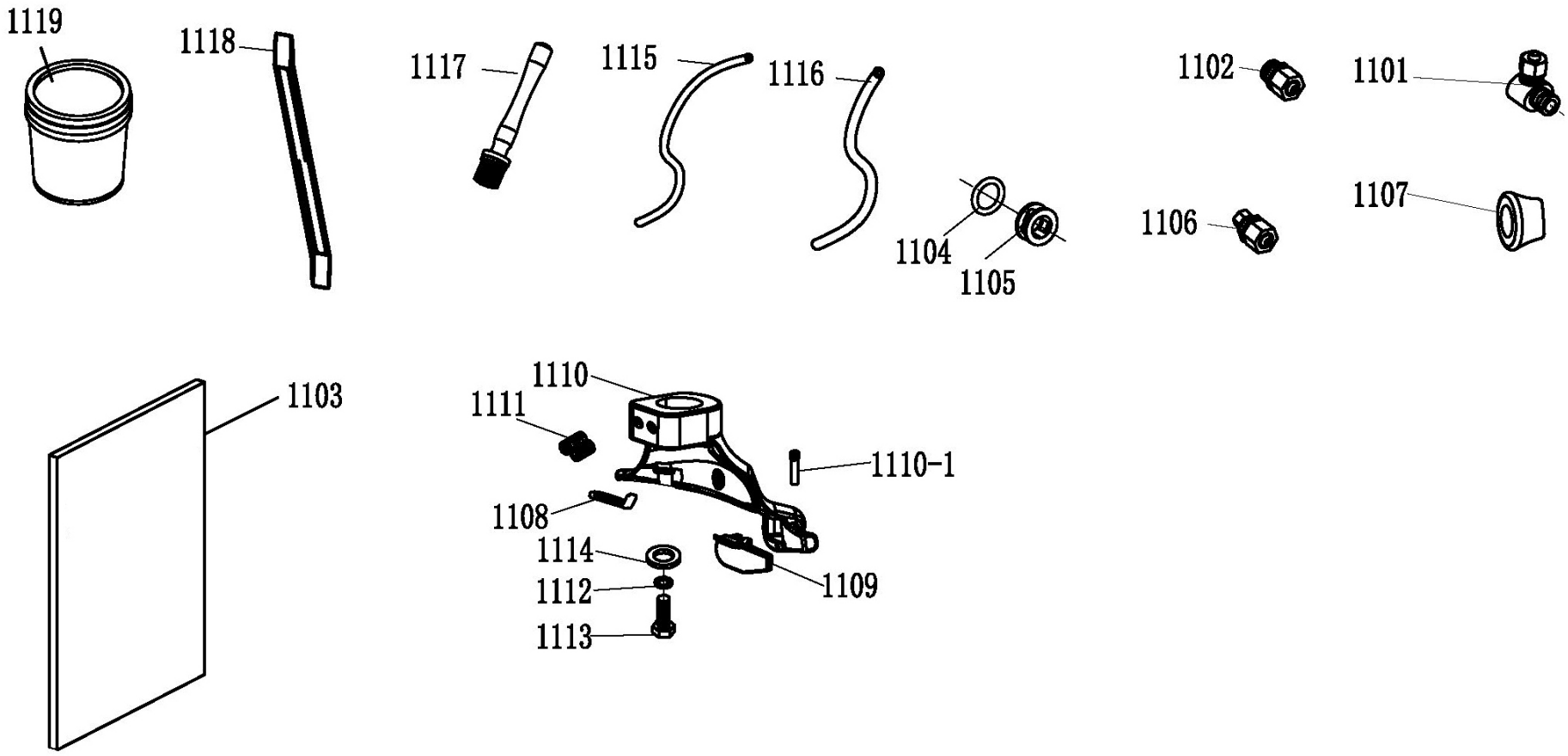
954-3	Roller pad
954-4	HHB M10x20
954-5	Washer ø10 Splick lock
954-6	Plastic Disk; B & I Models
954-7	Washer ø10 Splick lock
954-8	Plastic Roller Insert
954-9	SHCS M10x20
954-10	Locating pin
954-11	Pressure spring
954-12	Plum blossom handle
954-13	Washer
954-14	Washer ø16 Splick lock
954-15	Locking Nut M16
954-16	Positioning plate
954-17	SHCS M5 x 8
954-18	Catch
954-19	Inner hexangular set screw M5x10
958-1	Nut M8
958-2	Fitting; G1/8″ ø6 90°
958-3	Assist Tower Front Cyl Plate
958-4	O-ring ø25x2.65
958-5	O-ring ø90x2.65
958-6	Left Assist Tower Cyl Rod
958-7	Assist Tower Cyl Piston
958-8	Seal ring Ø33x25x6
958-9	Assist Tower Cyl Piston
958-10	O-Ring ø14x2.4; I Models
958-11	Washer Ø12 Flat
958-12	Locking Nut M12
958-13	Left Assist Tower Cyl Body
958-14	Assist Tower Rear Cyl Plate
958-15	Cylinder connecting thread shaft
963-1	SHCS M4x30
963-2	L/R Assist Arm Valve Cover; I Models
963-3	Assist Arm Control Valve; I Models
963-4	Adjustment silencer G1/8″
963-5	Banjo bolt G1/8" Ø6 Single
963-6	Nut M4
963-7	Washer; ø4 Flat
963-8	Washer ø4 Splick lock


1000-1
1003-5
1003-4
1003
1001
1003-3
1003-1
1003-2
1002
1001-1
1072
1082
1073
1083
1039-1
1084
1071
1070
1069
1067
1068
1094
1095
1004
1039
1085
1078
1079
1080
1081
1074
1075-1
1096
1075
1010
1065
1064
1067
1020
1086
1021
1019
1022
1023
1024
1032
1030
1031
1029
1093
1028
1026
1027-1
1027
1024
1025
1036
1005
1008
1006
1011
1009
1044
1043
1042
1045
1046
1048
1015
1014
1012
1013
1041
1047
1016
1017
1018
1040
1049
1050
1051
1089
1088
1087
1052-6
1052-5
1052-7
1052-4
1052-3
1052-1
1052-8
1052
1052-2
1092
1053
1052-9
1052-10
1052-11
1054
1055
1038
1037
1097
1035
1056
1090
1058
1058-3
1076
1091
1077
1058-2
1058-1
1057
1034
1033

1000-1	Upgrade Tower
1001-1	Assist Arm Valve Control Assy
1001	L/R Assist Arm Valve Cover; I Models
1002	SHCS M4 x 0.7 x 30 mm
1003	Assist Arm Control Valve; I Models
1003-1	Banjo bolt G1/8" Ø6 Single
1003-2	Adjustment silencer G1/4″
1003-3	Washer Ø4 Flat
1003-4	Washer ø4 Splick lock
1003-5	Nut M4
1004	Assist Tower Bent Arm
1005	Assist Arm Block
1006	SHCS M6x30
1008	Nut M6
1009	Left Assist Arm, Plastic Disk; 23/26 (I)
1010	Assist Arm Cone; B & I Models
1011	Assist Arm End Plug; R23/26 (I)
1012	Snap ring ø25
1013	Plastic Disk; B & I Models
1014	SHCS M10x50
1015	Assist Arm Connecting Link; R23/26 (I)
1016	Snap ring
1017	Washer ø10 Splick lock
1018	SHCS M10x20
1019	Fitting; ø6 x 1/8" 90
1020	Nut M8
1021	Washer Ø8 Flat
1022	Assist Tower Front Cyl Plat; R23/26 (I)
1023	O-ring ø25x2.65
1024	O-ring ø90x2.65
1025	Assist Tower Rear Cyl Plate; R23/26 (I)
1026	Cylinder connecting thread shaft
1027	Left Assist Tower Cyl Body; R23/26 (I)
1028	Left Assist Tower Cylinder; R23/26 (I)
1029	Locking Nut M12
1030	O-ring ø82.5x5.3
1027-1	O-ring ø14x2.4
1031	Assist Tower Cyl Piston; R23/26 (I)
1032	Left Assist Tower Cyl Rod; R23/26 (I)
1033	Washer; M6 Flat
1034	SHCS M6x12
1035	Left Assist Tower Cyl Cover; R23/26 (I)
1036	Fitting; ø6 x 1/8" 90

1037	Turbo Blast Hook; I Models
1038	Nut M8
1039	Presser arm weldment
1039-1	Metal Braided Hose Cover; R23/26 (I)
1040	Slide Unit
1041	Assist Tower Plastic Slide; I Models
1042	Slide Guide; R23LT/AT/R980XR
1043	Left Assist Tower Weldment
1044	Assist Tower Top Plug; R23/26 (I)
1045	Washer ø10 Splick lock
1046	SHCS M10×75
1047	Inner hexangular set screw M8X16
1048	SHCS M6 X 1.0 X 40 BOC
1049	Washer; M6 x 12mm Flat
1050	Nut M8
1051	Assist Tower Air Hose Cover; R23/26 (I)
1052	Tower Bracket Weldment
1052-1	SHCS M8x30
1052-2	Washer Ø8 Flat
1052-3	Snap ring ø12
1052-4	Washer Ø10 Flat
1052-5	Washer ø10 Splick lock
1052-6	SHCS M10x30
1052-7	SHCS M10x45
1052-8	Washer Ø10 Flat
1052-9	Nut M8
1052-10	Washer ø10 Splick lock
1052-11	Washer Ø8 Flat
1053	Assist Tower Lower Pin; R23/26 (I)
1054	Washer Ø12 Flat
1055	Snap ring ø12
1056	SHCS M10x30
1057	Washer Ø10 Flat
1058	Lower supporter unit
1058-1	Washer Ø10 Flat
1058-2	Washer ø10 Splick lock
1058-3	SHCS M10X30
1064	Washer ø8 Splick lock
1065	SHCS M8x20
1067	Washer Ø8 Flat
1068	SHCS M8×25

1069	Tool Box Bracket
1070	Nut M8
1071	Tool Box; I Models
1072	SHCS M12 x 1.75 x 30
1073	Washer
1074	Roller latch M8x18
1075	Cone Shaft; B & I Models
1075-1	Assist Arm Cone Assy; B & I Models
1076	SHCS M8x30
1077	Washer Ø8 Flat
1078	Assist arm handle weldment
1079	Cross recessed pan head screw M5x12
1080	Washer Ø5 Flat
1081	Washer ø 5 Splick lock
1082	Washer ø12 Splick lock
1083	Cross recessed pan head screw M4x12
1084	Bearing B3025
1085	Assist Tower Bent Arm Plug
1086	Seal ring Ø33x25x6
1087	SHCS M8x30
1088	Washer ø8 Splick lock
1089	Washer Ø8 Flat
1090	Washer ø10 Splick lock
1091	Washer ø8 Splick lock
1092	Chassis Bracket Weldment
1093	Washer; Ø12 flat
1094	To the top
1095	Nut M18
1096	Screw
1097	8 mm to 6 mm union


1119
1118
1117
1115
1116
1102
1101
1104
1105
1106
1107
1103
1110
1111
1110-1
1108
1114
1112
1113
1109

1101	Elbow 1/8″ Ø8
1102	Lock nut G1/8″ Ø8
1103	Instruction book
1104	O ring
1105	Air Valve skeleton; I Models
1106	Lock Nut Reducer G1/8″ Ø8-Ø6
1107	Pulley
1108	Duck head pressure pad
1109	Duck head spacer
1110	Duck head
1110-1	Ingot screws
1111	Hexagon socket set screw M12 x 16-12.9
1112	Spring washer Ø10
1113	Hexagon bolt M10 x 20
1114	Duck head spacer
1115	PU Tube Ø6 x1000 mm
1116	PU Tube Ø8 x1000 mm
1117	Brush
1118	Crowbar 20"
1119	White water box

For Parts Or Service Contact:

BendPak Inc. / Ranger Products
1645 Lemonwood Dr.
Santa Paula, CA. 93060

Tel: 1-805-933-9970
Toll Free: 1-800-253-2363
Fax: 1-805-933-9160

www.bendpak.com
www.rangerproducts.com

p/n# 5900956

BendPak® PROVIDING AUTOMOTIVE SERVICE SOLUTIONS

Ranger™ PRODUCTS