⚠ 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 08-04-10
pn# 5900173

INSTALLATION AND OPERATION MANUAL

TIRE CHANGER
MODELS:
R23LT / R23AT

FOR SERVICING
AUTOMOBILE
AND LIGHT TRUCK
SINGLE PIECE
TIRES/WHEELS



R23LT





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
Fax: 1-805-933-9160
www.rangerproducts.com

R-23LT / 23AT
TIRE CHANGER

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 INC./ RANGER PRODUCT OR THE BREACH OR DELAY IN PERFORMANCE OF THE WARRANTY.

WARRANTY IS NOT VALID UNLESS WARRANTY CARD IS RETURNED.

TABLE OF CONTENTS

Warranty 2
Operator Protection 3
Section 1: Definitions of Hazard Levels 4
Owner's Responsibility 4
Section 2: Safety Instructions 5
Section 3: Tire and Wheel Service Safety Instructions . . 6
Section 4: Description of Parts 7
Section 5: Specifications / Tools Required 8
Section 6: Lifting / Uncrating Instructions. 9-10
Section 7: Installation Location 11
Section 8: Assembly 12-14
Section 9: Anchoring / Air Source/ Oiler Adjustment . . .15
Section 10: Electrical / Wiring Instructions 16-17
Section 11: Operating Instruction 18
Bead Loosening and Demounting 18
Important Wheel Mounting Instructions 19
Section 12: Custom and Special Wheels 23
Demounting Tube Tires 23
Section 13: Mounting. 24-25
Section 14: Mounting Tube Type Tires 25
Section 15: Inflation / Inflation Pedal Operation. 26
Section 16: Stages Of Inflation 27
Stage One: Wheel Restraint 27
Stage Two: Bead Sealing 27
Stage Three: Bead Seating 29
Stage Four: Tire Inflation 30
Section 17: Maintenance Instructions 31
Mount / Demount Head 31
Water Separator/ Oiler 32
Turntable Drive Belt 33
Inflation Pedal Pressure Limiter Maintenance.34
Critical Safety Warnings / Instructions 35
Service Parts 36-51

⚠ 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!

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.



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

OWNER'S RESPONSIBILITY







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 protocols are followed before any attempt is made to work on or near equipment.

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 on the RX-23LT/ 23AT. 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 hosing down 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 Disc

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 bodily 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.

Inflation

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.

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.

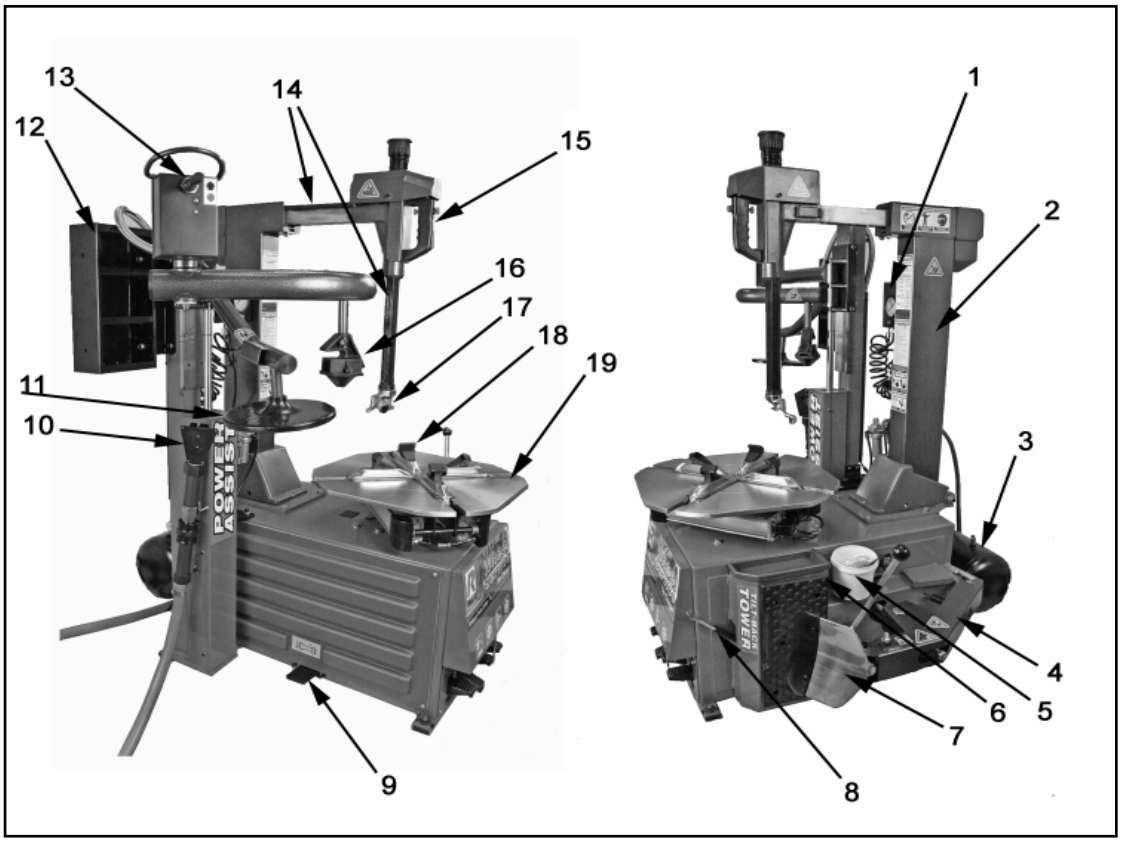
ALWAYS be sure the tire diameter exactly matches the wheel diameter.

⚠ DANGER

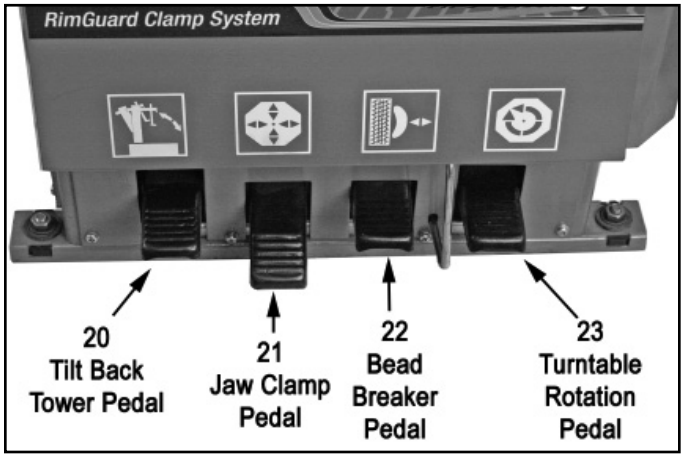
DANGER!

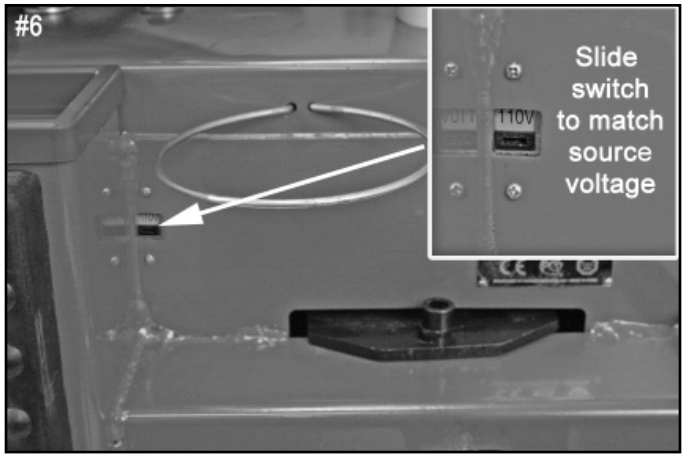
Tire failure under pressure can be hazardous. When possible, always place wheels inside an approved inflation chamber or cage before inflating. Use an approved remote inflation valve, hose, and gauge. ALWAYS wear safety goggles for eye protection. Do not stand beside the wheel or cage during inflation. 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 maximum 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 Air Inflation Gauge
2 Tower
3 Turbo Blast Tank
4 Bead Breaker Arm
5 Lube Bucket Dispenser
6 Voltage Selector Switch
7 Bead Breaker Shoe
8 Tire Iron
9 Inflation Pedal
10 Turbo Blast Nozzle
11 Helper Disc
12 Tool / Storage Tray
13 Assist Arm Control Pod
14 Horizontal / Vertical Slides
15 Slide Adjustment Handle
16 Left Helper/Restraint Head
17 Combination Mount Demount Head
18 Table Top Clamps
19 Turntable
20 Tilt Back Tower Pedal
21 Jaw Clamp Pedal
22 Bead Breaker Pedal
23 Turntable Rotation Pedal





Note: The parts and procedures shown in this manual include optional equipment that may not be included on the model of Tire Changer you are using.

SECTION 5
FEATURES / SPECIFICATIONS: MODEL R23LT / R23AT

FEATURES / SPECIFICATIONS	MODEL R23LT / R23AT
Type of Drive System	Air / Electric
Motor	Dual Voltage 110/220V 50/60HZ 1 Ph.
Air Requirement	140-165 PSI (10-11 BAR)
Wheel Clamping Method	4 Rim-Guard Clamps - Internal / External
Table Clamping System	Dual Pneumatic Cylinders
Bead Breaking System	Pneumatic Blade / Dual Settings
Turntable Speed -360-Degree Rotation	6.9 Seconds
Tool Holder	Pneumatic Lock
Adjustable Turntable Clamps	Standard
Inflation System	Standard
Inflation Pressure Regulator/Limiter	Standard
Water Filter	Standard
Oiler / Lubricator	Standard
Air Regulators	Standard
Bead Lifting Tool	Standard
Large Soap / Lubricator Bucket	Standard
Brush	Standard
Tower Design	Tilt Back
Powerful "Turbo -Blast" Bead Seating System	Standard
Tire Inflation	Standard
Tool Tray / Bin Storage	Standard
Internal Rim Clamping Capacity *	11" – 24" (279 mm – 610 mm)
External Rim Clamping Capacity *	10" – 23" (254 mm – 584 mm)
Turntable Tire Width Capacity (Mounting)	4.5" – 17.5" (114 mm – 444 mm)
Bead Breaker Tire Width Capacity (Demounting)	1" – 16" (25 mm – 406 mm)
Maximum Tire Diameter	44" (1118 mm)
Shipping Weight	R23LT: 712 lbs. (323 Kg) / R23AT: 860 lbs. 391(Kg)
Specifications are subject to change without notice.	
* NOTE: Internal and External Rim clamping dimensions do not translate directly to rim or tire sizes as rim clamping points may vary by manufacturer.	

Tools required.

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.

Parts required but not supplied.

1. Teflon 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 R2LT/ R23AT is shipped in a wooden crate or box on pallet, (See Fig 6.1)


Fig. 6.1

Approximate shipping dimensions:

R23LT: 51”W x 44”L x 39”H / 130mm x 112mm x 100mm

R23AT: 52W” x 45”L x 73”H/ 132mm x 114mm x 186mm

⚠ CAUTION

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.

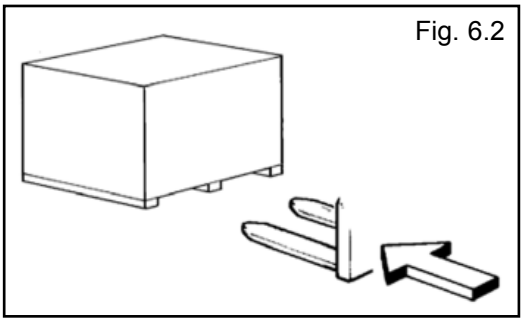


Fig. 6.2

⚠ CAUTION

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. Using a crow bar or pry bar, locate the metal tabs and pry open the tabs and or staples. (See Fig 6.3)

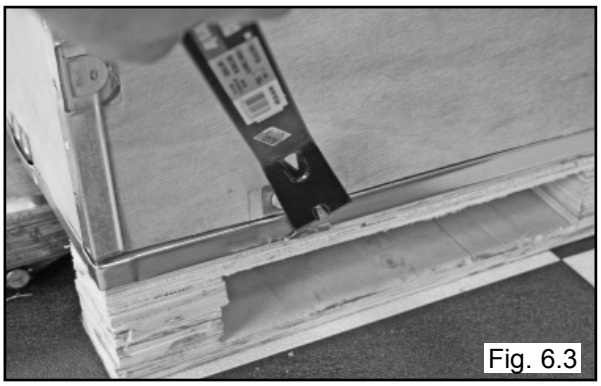


Fig. 6.3

2. The entire wooden frame/box can be lifted off after prying the tabs/staples at the base of the crate. (See Fig 6.4)


Fig. 6.4

3. Carefully cut the plastic wrapping and remove.

R23LT ONLY

⚠ CAUTION

CAUTION!

Secure the Tilt Tower with shop crane or personnel prior to cutting metal strapping as Tilt Tower may have shifted during shipping. Be careful as banding may snap or fly when tension is released.

4. Either cut or unscrew the metal strapping holding the Tilt Tower to the pallet and set aside. (See Fig 6.5)

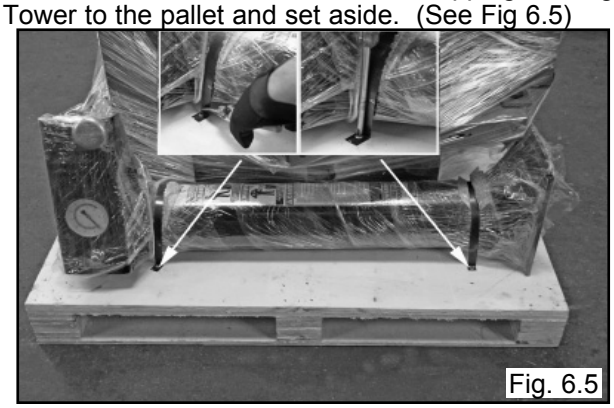


Fig. 6.5

5. While holding the Tilt Tower, carefully cut the Tilt Tower free of the plastic wrapping securing it to the Tire Changer base.

6. Carefully remove the rest of the plastic wrapping from the Tire Changer.

7. Remove the front and rear Bolts and Nuts holding the tire changer from the pallet. (See Figs. 6.6 - 6.7)



Fig. 6.6

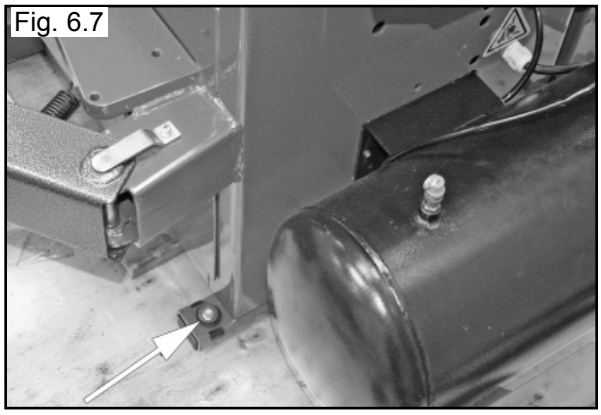


Fig. 6.7

⚠ CAUTION

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.

8. 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. 6.8)


Fig. 6.8

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

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.

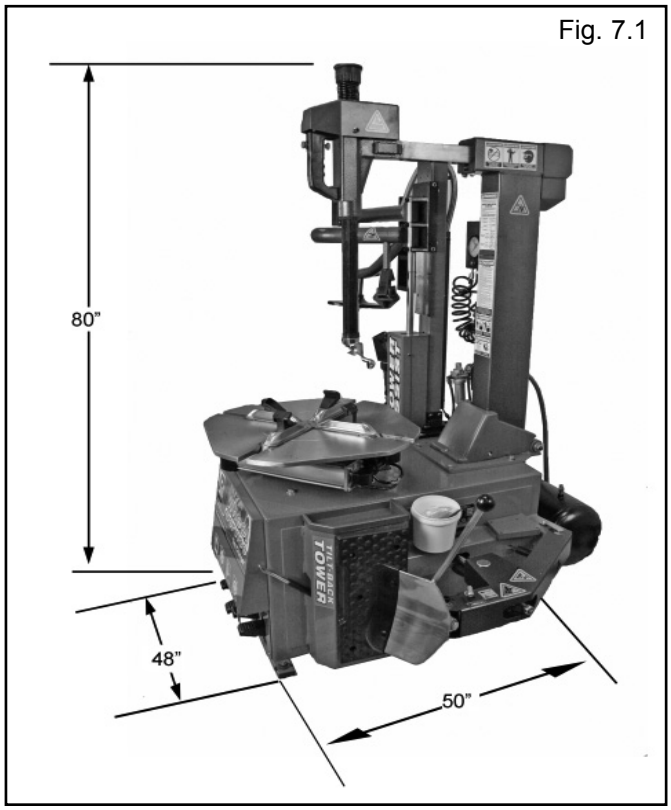
Proper unit installation is necessary for safe use and efficient operation. Proper installation also helps protect the unit from damage and makes service easier. Always keep this manual with unit.

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:
48” W x 50” D X 80”H
R23-AT

Fig. 7.1

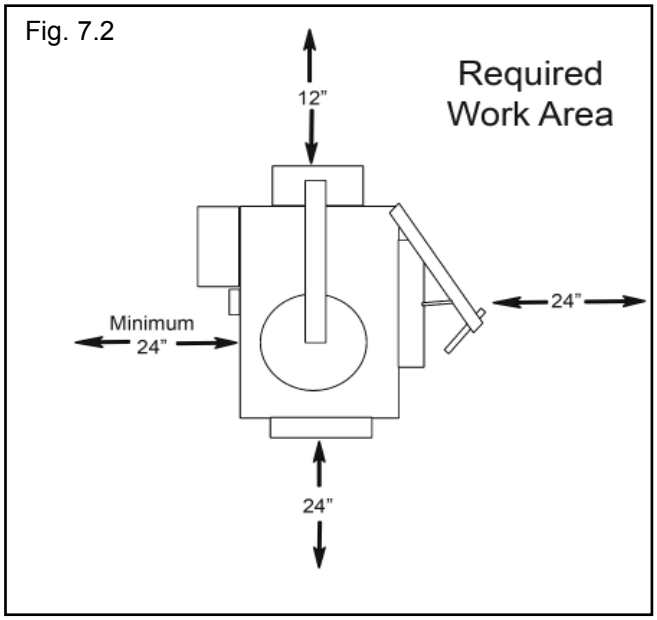


DANGER

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

R23LT ASSEMBLY

Tilt Tower

1. Remove the Side Panel. (See Fig. 8.1)

Fig. 8.1



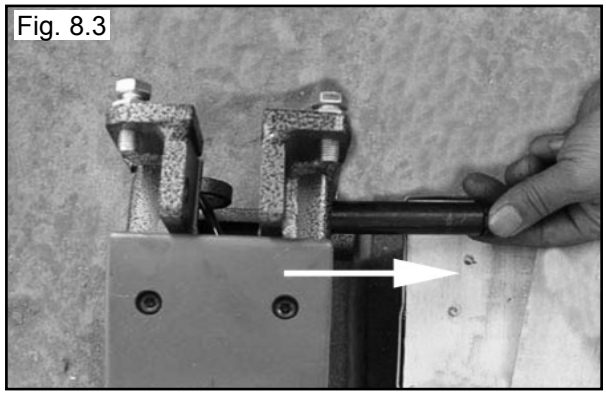
2. Remove the Tilt Tower main Pivot Pin from the Tilt Tower Base before starting. (See Fig. 8.2)

Fig. 8.2



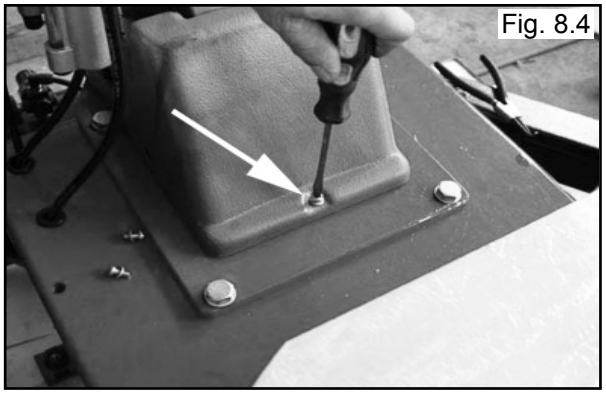
3. Remove the Tilt Tower Safety Pin from the Tilt Tower Base. (See Fig. 8.3)

Fig. 8.3



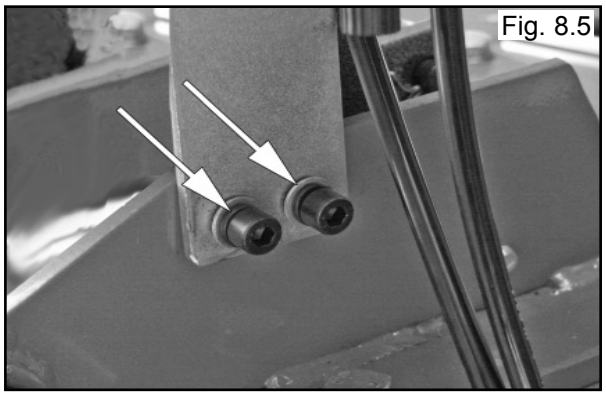
4. Remove the Plastic Tilt Tower Base Cover. (See Fig. 8.4)

Fig. 8.4



5. Remove the Bolts holding the Air Oil Regulator Bracket and set the Air Oil Regulator Assembly aside. (See Fig. 8.5)

Fig. 8.5



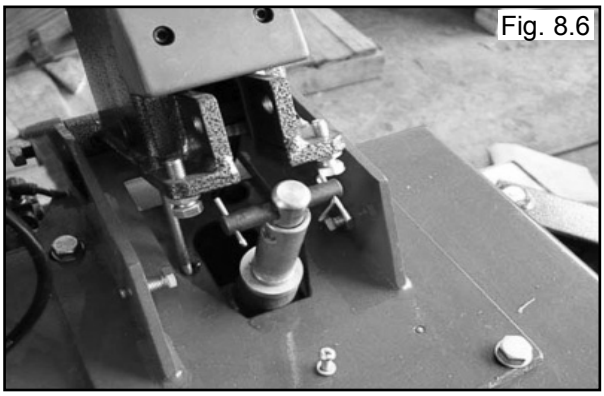
⚠ CAUTION

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.

6. Using a shop crane or other lifting device, lower the Tilt Tower onto the base and align the Main Pivot Pin holes. Take care not to damage the bottom of the Tilt Tower or Air Line. (See Fig. 8.6)

Fig. 8.6



7. Insert the man Pivot Pin though the holes in the Tilt Tower Base and Tilt Tower and secure the Nyloc Nuts. (See Fig. 8.7)

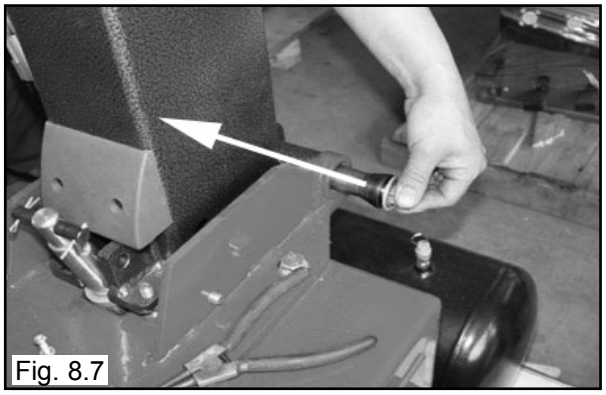


Fig. 8.7

8. Remove the Tilt Tower Cylinder Pin from the Tilt Tower Cylinder Shaft. (See Fig. 8.8)

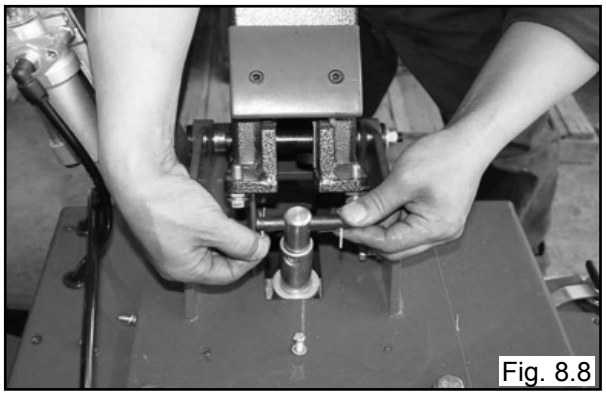


Fig. 8.8

9. Align the Tilt tower and the Safety Hook. Push the Tilt Tower Safety Pin through the Tilt Tower. (See Fig. 8.9)

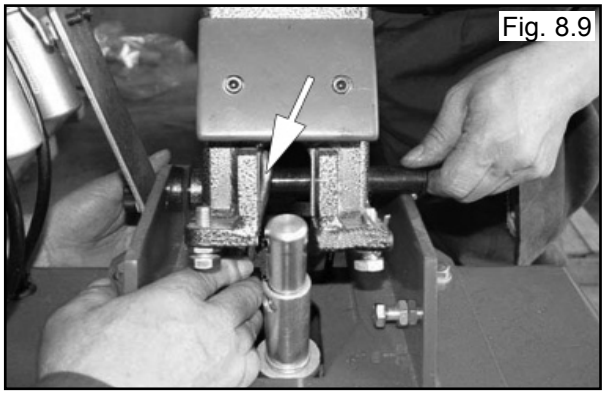


Fig. 8.9

10. Be sure the Pin passes through the Safety Hook. Secure with the Snap Rings. (See Fig. 8.10)

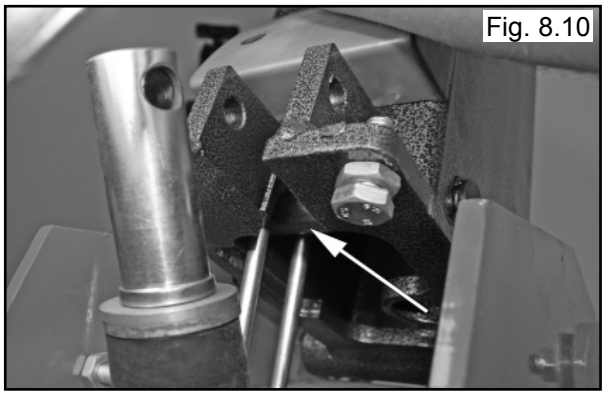


Fig. 8.10

11. Feed The Tilt Tower Air Line through the hole in the Top of the base Cabinet as shown. (See Fig 8.11)

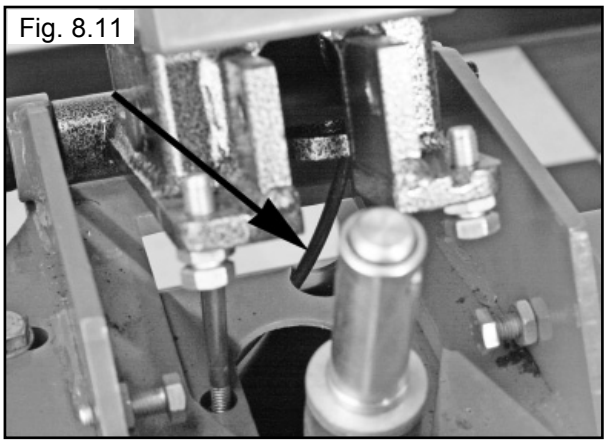


Fig. 8.11

12. Align the Cylinder Shaft and cylinder pin and hole in the Tilt Tower and insert the Cylinder Pin. Secure the Cylinder Pin with the two Cotter Pins and bend Cotter pins. (See Fig 8.12)

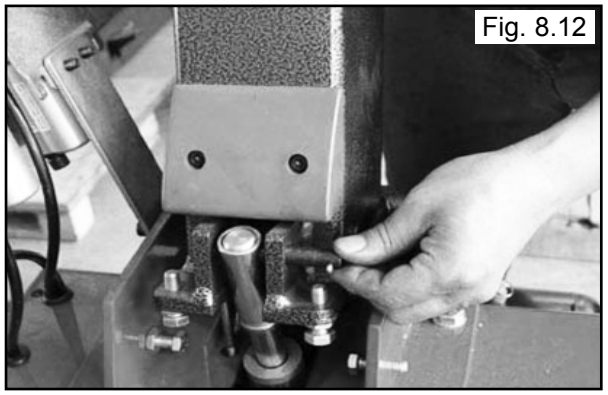


Fig. 8.12

13. Reinstall the Air Oil Regular.

14. Reinstall the Tilt Tower Plastic Cover.

15. Connect the Pressure Gauge Air Line to the Y Fitting below the Pressure Gauge. (See Fig 8.13)

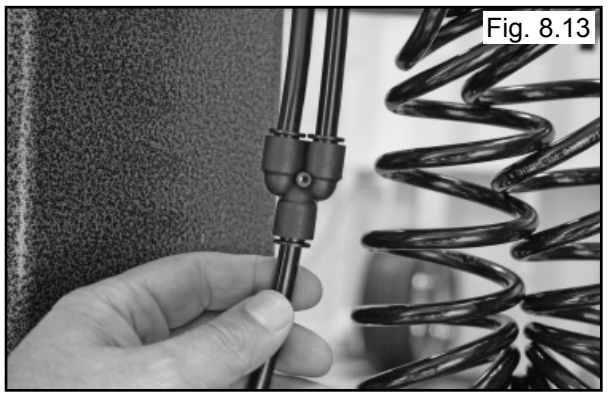


Fig. 8.13

16. Route the Pressure Gauge Air line through the hole in the Base Cabinet and connect it to the Pressure Regulator located at the rear of the Cabinet. (See Fig 8.14)

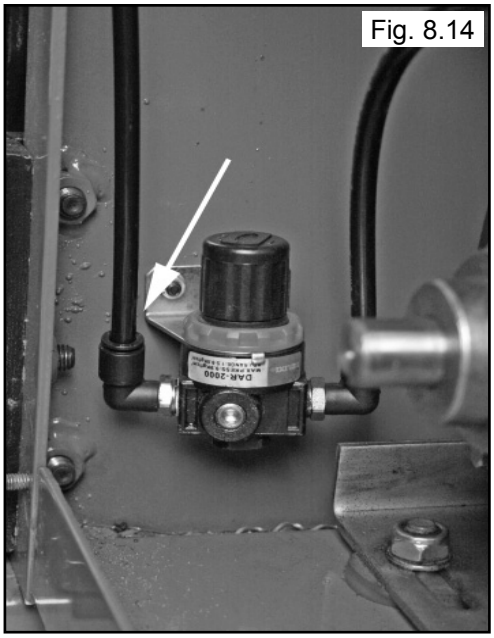


Fig. 8.14

17. Connect the Air Line from the Tilt Back Tower to the Tee Fitting located Inside the Rear of the Cabinet. (See Fig 8.15)

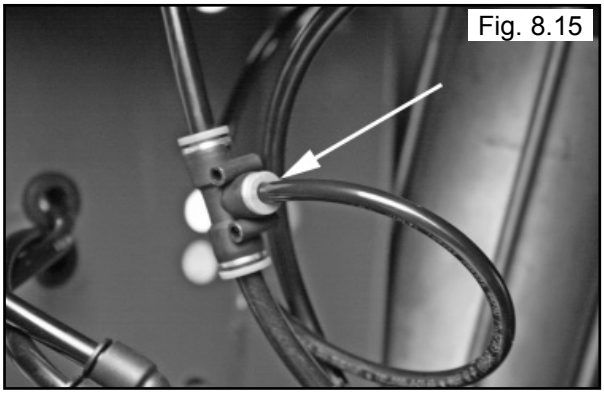


Fig. 8.15

18. Reinstall the Side Cover.

⚠ WARNING

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 not followed.

Bead Breaker Blade

1. Attach the Bead Breaker Blade to the Bead Breaker Arm Assembly. Secure the Nyloc nut. (See Fig. 8.16)

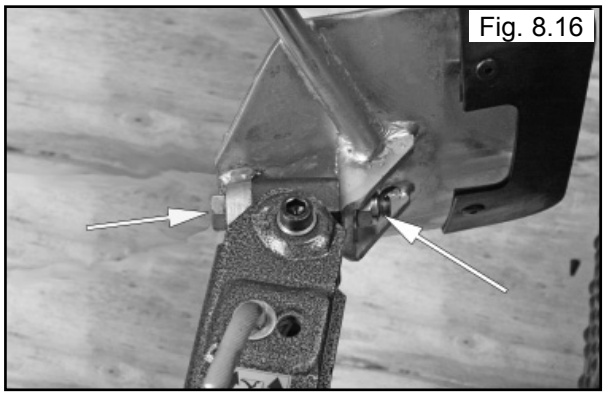


Fig. 8.16

Demount Head Assembly

1. Check that the Demount Head Bolt and Allen Screws are tightened. (See Fig. 8.17)

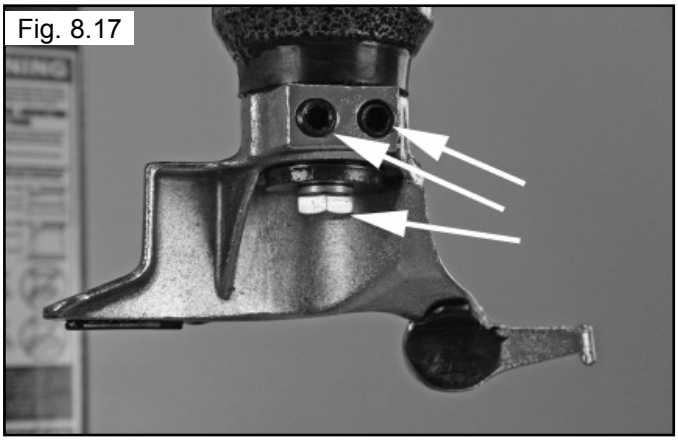


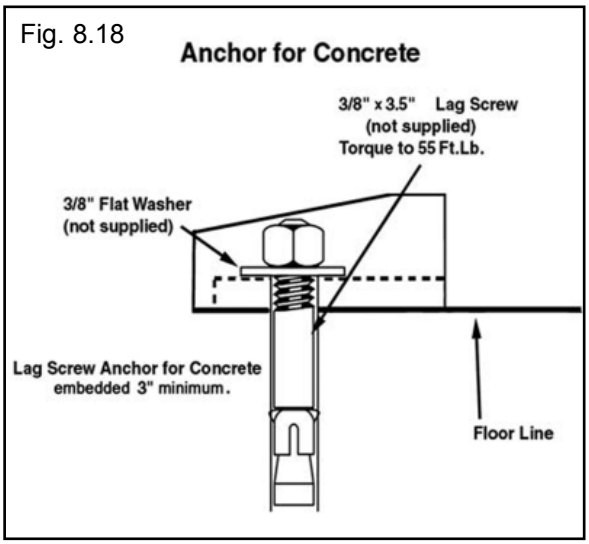
Fig. 8.17

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. 8.18)

Fig. 8.18

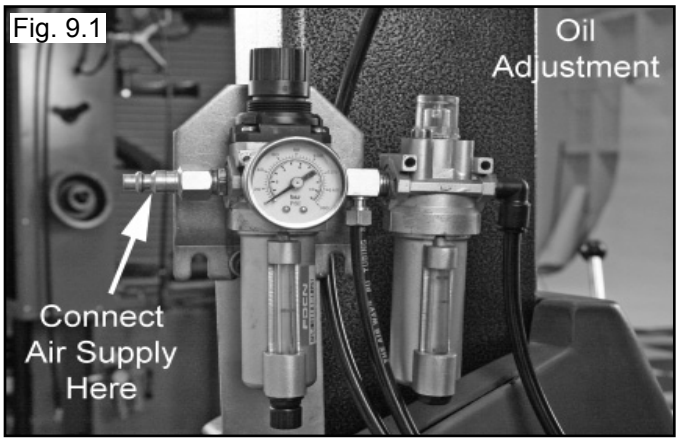


AIR SOURCE

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 on the rear of the machine. (See Fig. 9.1)

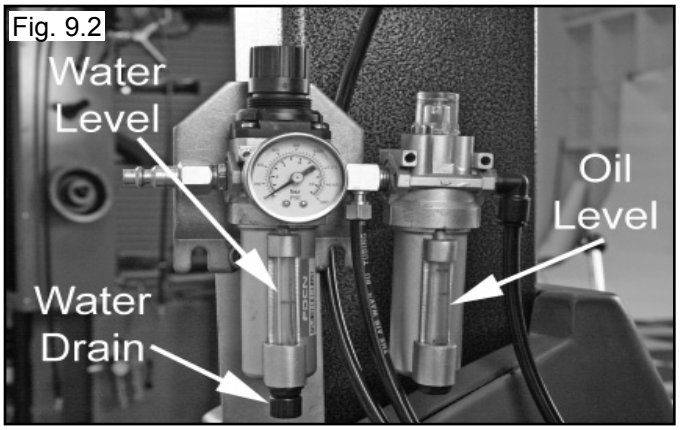


OILER ADJUSTMENT

⚠ WARNING

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.

1. Check Oil Level on Oil Cup Site Glass. (See Fig. 9.2)



If Oil level is low refer to Section 17, Page 32 for filling instructions.

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 9.3)

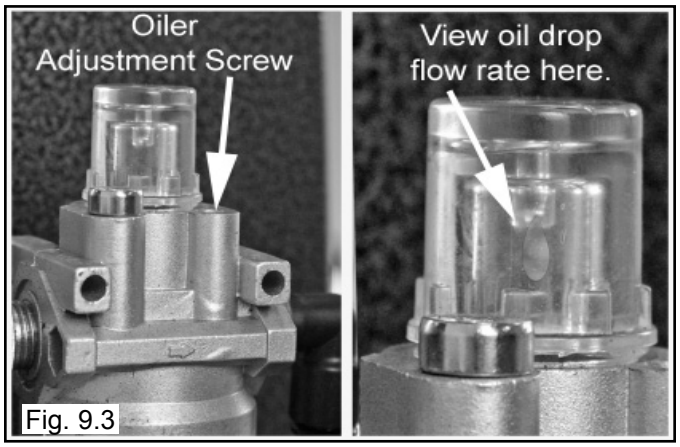


Fig. 9.3

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

SECTION 10

ELECTRICAL SOURCE

This unit requires power from a 15 amp electrical circuit. The unit is supplied standard with a 110 Volt power cord and plug. (See Fig. 10.1)

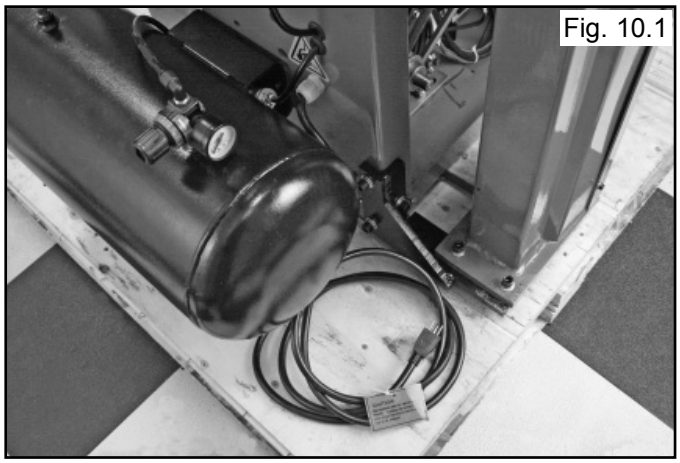


Fig. 10.1

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.

⚠ WARNING

WARNING!
GUARD AGAINST ELECTRICAL 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

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

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.

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.

IMPORTANT NOTE:

YOUR MACHINE HAS A DUAL VOLTAGE MOTOR and can be run on either 110 or 220 volts.

STANDARD WIRING IS 110 VOLTS.

See below before connecting 220 volts to your machine or serious damage to the motor/electronics will result.
Confirm voltage selector switch is positioned correctly before connecting power to your machine or serious damage to the motor/electronics will result. (See Fig. 10.2)

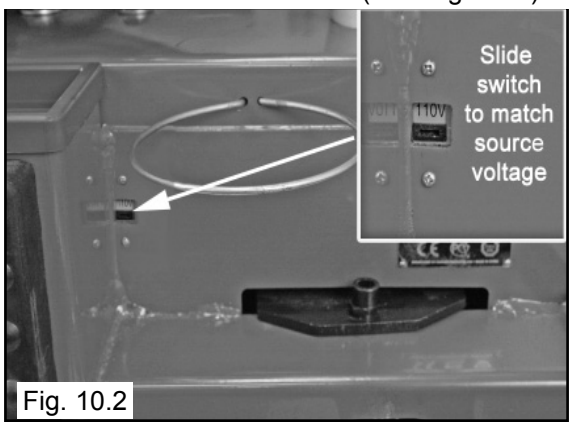


Fig. 10.2

Refer to Page 7 Item #6 for location of Voltage Selector Switch.

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

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).

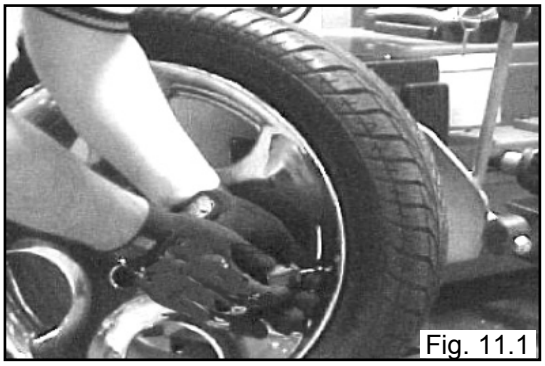


Fig. 11.1

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 Page 19 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 and roll the wheel into position. The valve stem should be in the 2 o'clock position.

6. Position the bead breaker shoe against the tire next to, but not on, the rim. Press the breaker pedal to actuate the shoe and loosen the bead. It may be necessary to loosen the bead in multiple locations around the tire.
(See Fig. 11.2)

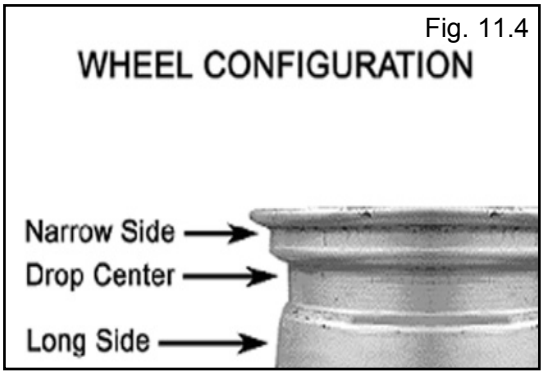

Fig. 11.2

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. (See Fig. 11.3)


Fig. 11.3

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. 11.4)

Fig. 11.4



DANGER

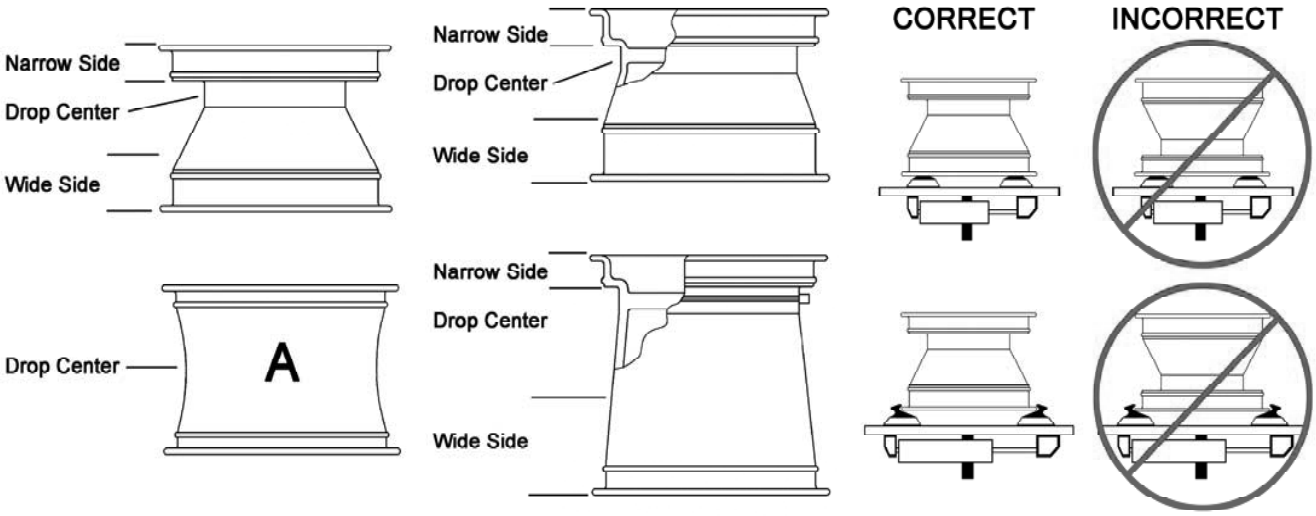
The following instructions help identify how to properly mount wheels on the tire changer turntable. Failure to follow these instructions may lead to tire and/or wheel damage, equipment damage or failure, serious personal injury or death to operator or bystanders or damage to property.

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.

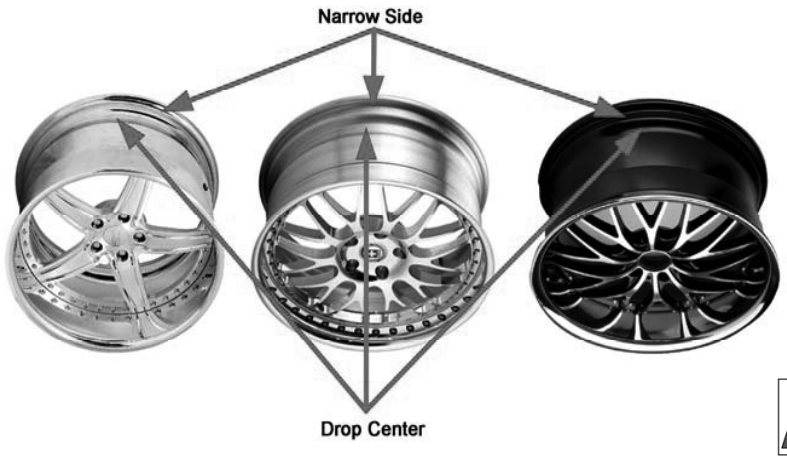
3. The tire must ALWAYS be demounted or mounted with the wheel positioned on the turntable with the Narrow Side facing upward and the deepest part of the Drop Center facing upward.



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.

.



9. Place tire/wheel assembly on table top with mounting side up. (See Fig. 11.5)


Fig. 11.5

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 or outward. (See Fig. 11.6)

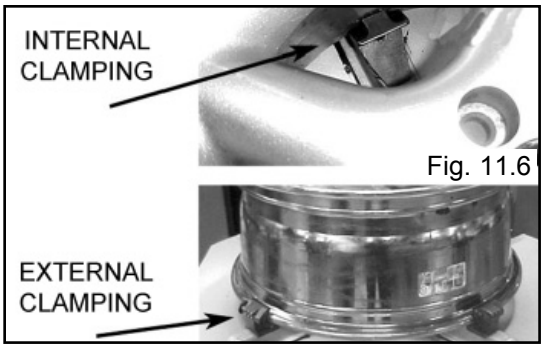


Fig. 11.6

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. 11.7)


Fig. 11.7

12. Use the lower bead helpers to assist in the bottom bead lubrication. (See Fig. 11.8)

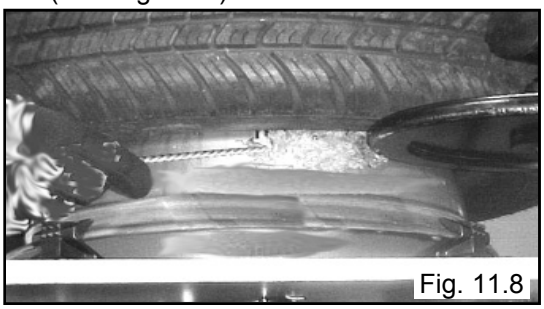


Fig. 11.8

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. 11.9 - 11.10)

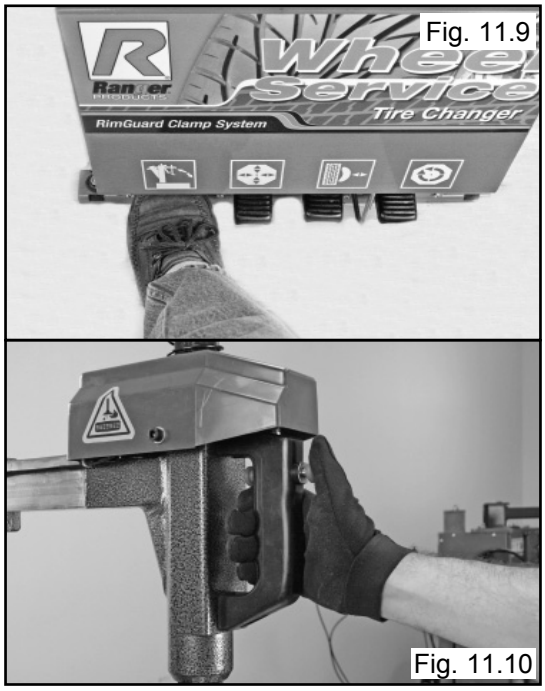


Fig. 11.9

Fig. 11.10

14. Push the vertical slide down and position the demount head into contact with the rim edge. (See Fig. 11.11- 11.12)

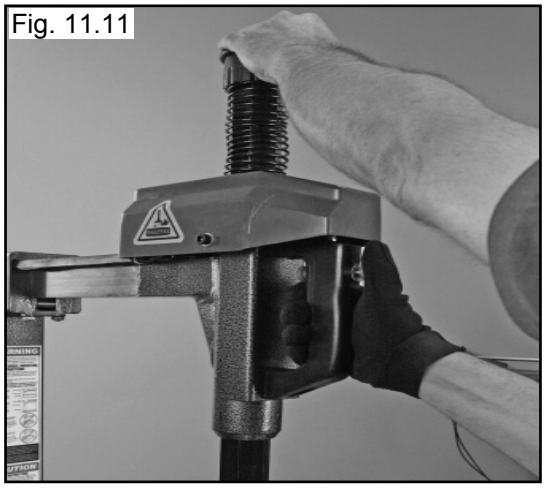


Fig. 11.11

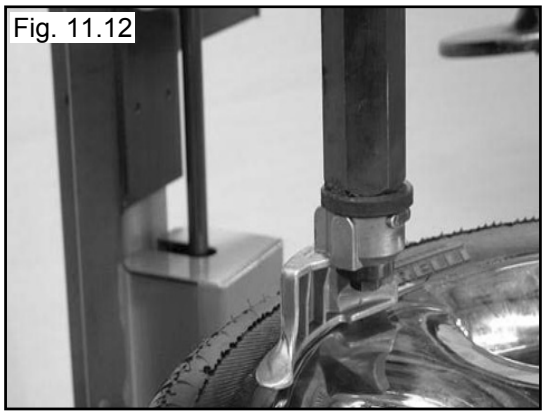
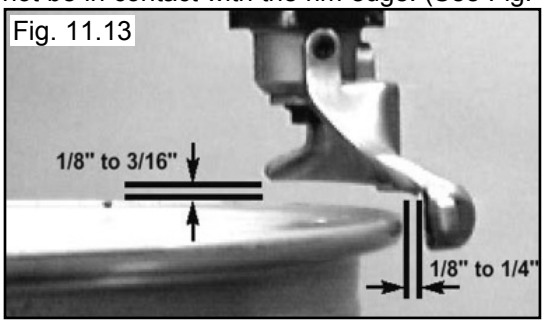


Fig. 11.12

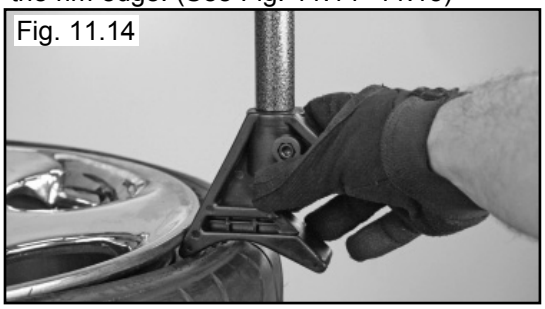
15. Push the locking valve button to lock the slides into place. As the slides are locked, the mount/demount head will move upward approximately 1/8 inch and backward 1/8 inch from the rim edge. The mount/demount head roller should not be in contact with the rim edge. (See Fig. 11.13)

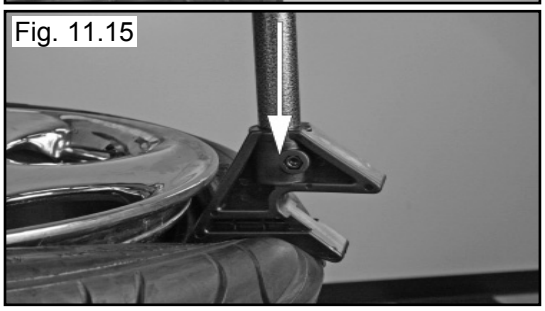


NOTE:

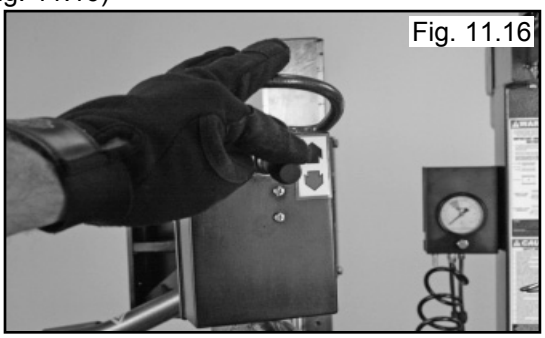
This clearance will be maintained as long as the slide locking valve remains locked. The operator may tilt the tower back out of the way and back into place again without needing to reposition the head when changing a like set of wheels. The tool clearance may change with machine use and should be inspected 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. 11.14 -11.15)

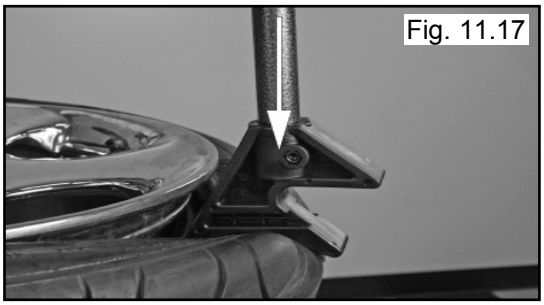




17. Press down on the left hand control valve. (See Fig. 11.16)

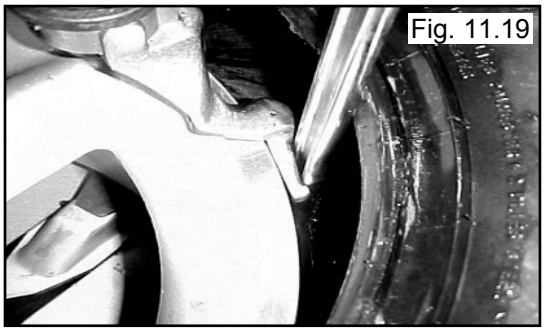


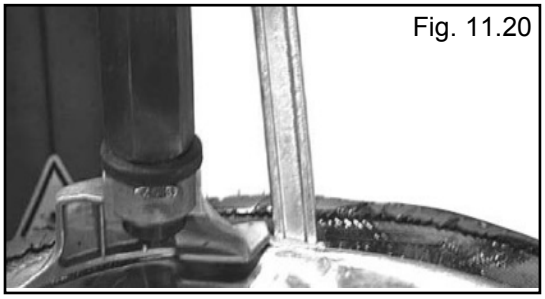
18. Power the left top helper down to force the tire bead into the drop the center of the wheel. (See Fig. 11.17 - 11.18)



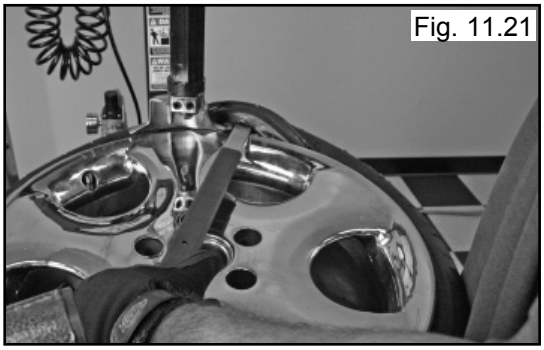


19. Insert the smooth curved end of tool bar over the right end knob of the mount/demount head and below the top bead of the tire. (See Fig. 11.19 -11.20)





20. Push the tool bar down toward the wheel to lift the tire bead up and over the right -side knob portion of the demount head. Hold the tool bar in this position. (See Fig. 11.21 - 11.22)



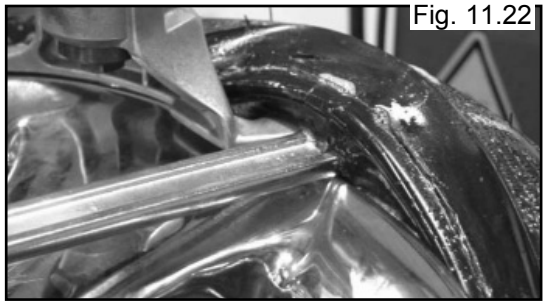


Fig. 11.22

21. Depress the table top pedal to rotate the wheel clockwise. Leave the left hand helper in position opposite the demount head and allow it to follow the wheel rotation to assist the bead into drop center while demounting. Hold the tool bar down until demounting nears completion. (See Fig.11.23 - 11.25)

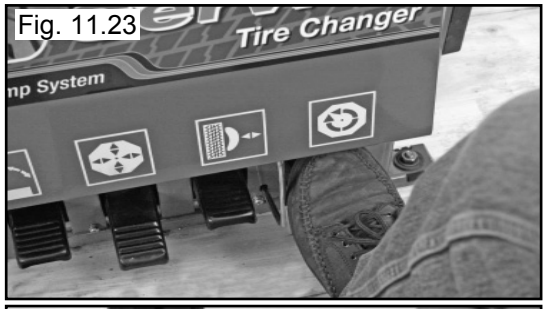


Fig. 11.23

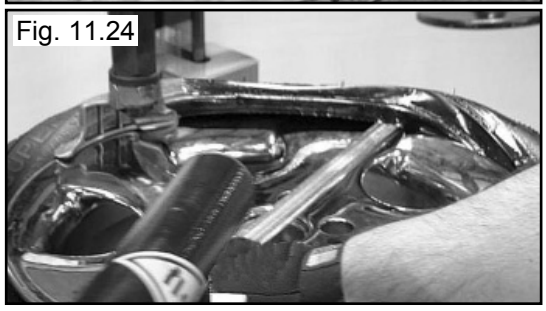


Fig. 11.24


Fig. 11.25

DANGER

DANGER!

The tool bar and demount head may encounter resistance or come under load at times during the mount and demount procedures. Keep one hand firmly on the tool to avoid possible tool kick back. Use the reversing feature (lift table top pedal upwards) to back out of jam ups.

22. Lift and hold the tire so it is positioned with the lower bead in the drop-center portion of the wheel. If the tire is large/wide or has become stuck on the lower part of the rim, the lower bead helper disk may be used to un-stick and raise the tire. (See Fig. 11.26)


Fig. 11.26

23. Insert the smooth curved end of the tool bar over the right end of demount head and below the lower bead of the tire. Push the tool bar down toward the wheel to lift the tire bead up and over the right -side knob portion of the demount head. Hold the tool bar in this position. (See Fig. 11.27 -11.28)


Fig. 11.27

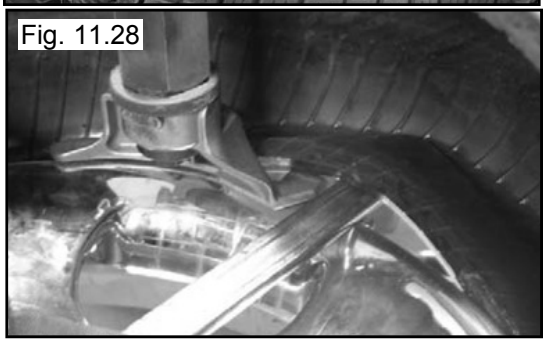


Fig. 11.28

24. Depress the table top pedal to rotate the wheel. The demount head will guide the bead up and over the edge of the wheel. Continue rotation until the lower bead is de-mounted. The helper disk should be removed during rotation. Swing the disc out of the way to complete de-mounting. (See Fig. 11.29)

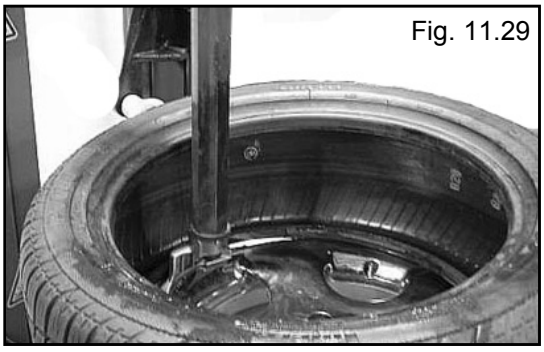


Fig. 11.29

25. After the tire has been removed from the wheel, depress the tower tilt pedal to move the tower away from the wheel. (See Fig. 11.30)

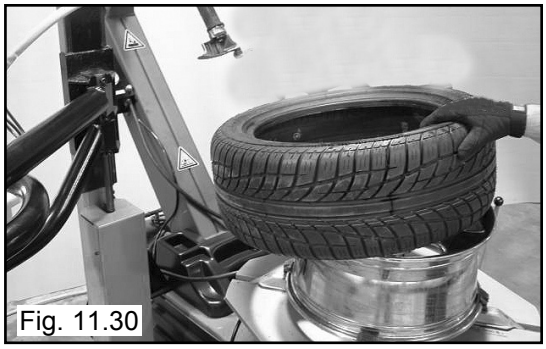


Fig. 11.30

SECTION 12

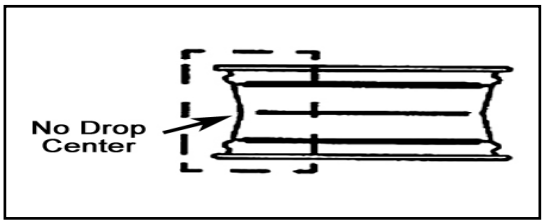
CUSTOM AND SPECIAL WHEELS

⚠ 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.

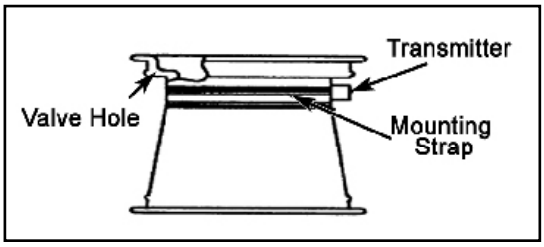


European Performance Wheels (Asymmetrical Hump)

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

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

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

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

WARNING

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.

MOUNTING

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 tire and wheel size match. (See Fig. 13.2)

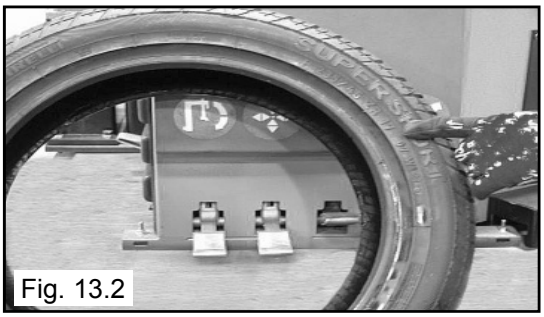


Fig. 13.2

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 “duckbill” side of the mount/demount head and below the right front knob. (See Fig. 13.4)

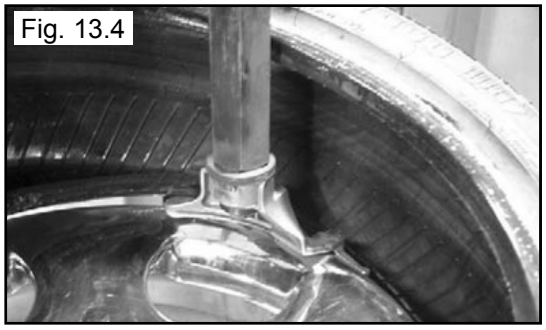


Fig. 13.4

5. Manually force 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 -13.6)

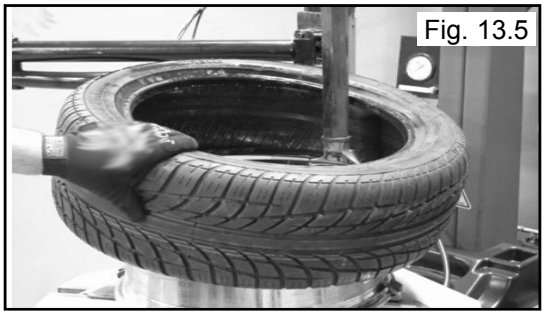


Fig. 13.5

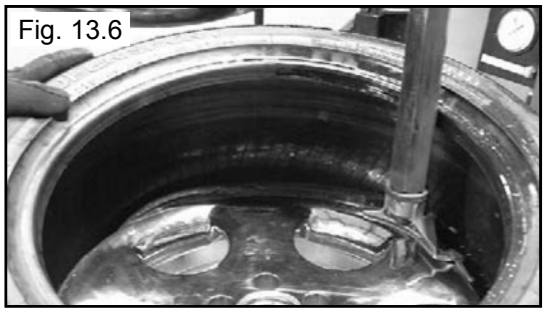


Fig. 13.6

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 “duckbill” side of the mount/demount head and below the right front knob. (See Fig. 13.7)

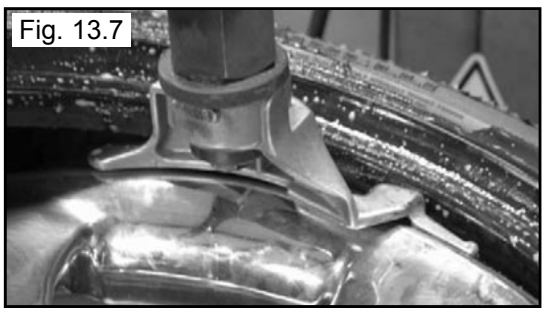


Fig. 13.7

7. 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. 13.8)

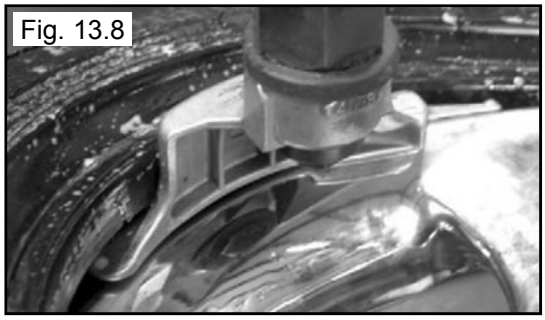


Fig. 13.8

8. Depress 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. 13.9 -13.12)

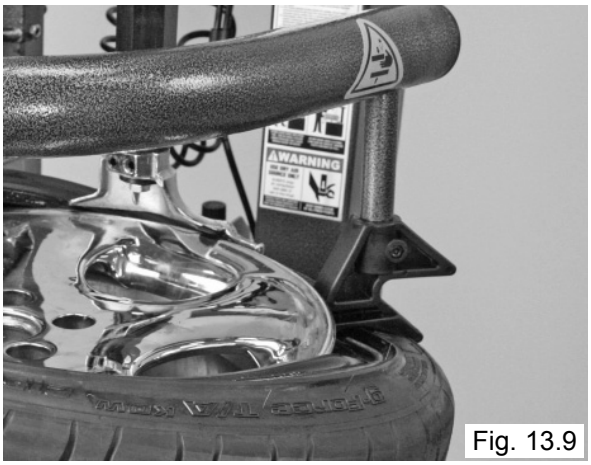


Fig. 13.9

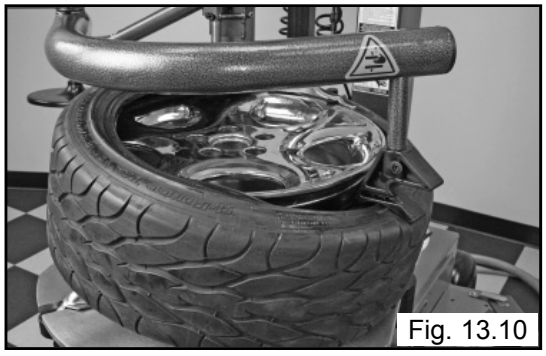


Fig. 13.10

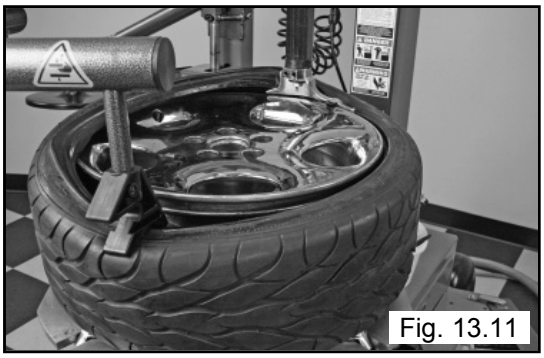


Fig. 13.11


Fig. 13.12

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.

⚠ WARNING

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

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

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

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

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

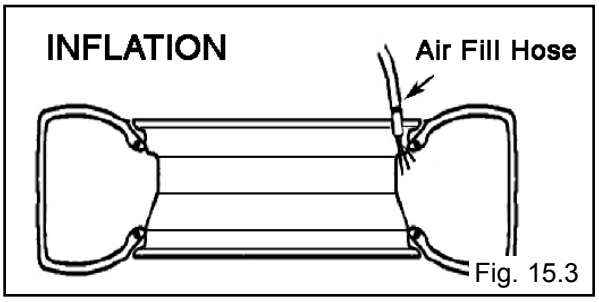


Fig. 15.3

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.

⚠ WARNING

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.

STAGE ONE / WHEEL RESTRAINT

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 Demounting Section for review.

2. Raise the left helper and support assembly and insert the restraint devise as shown. (See Fig. 16.4)

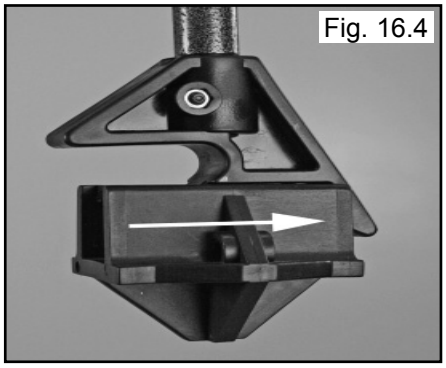


Fig. 16.4

2. 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.16.5-16.6)

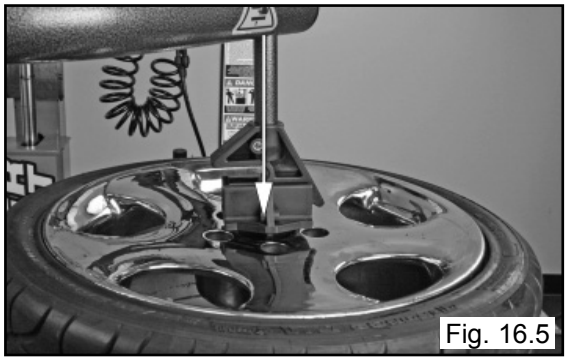


Fig. 16.5

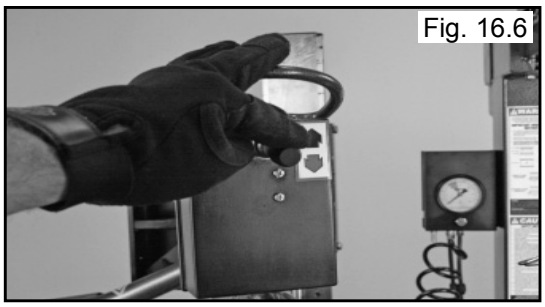


Fig. 16.6

STAGE TWO / BEAD SEALING

1. Remove the Valve Stem Core and position Valve Stem and connect the Inflation Hose. (See Fig. 16.7)


Fig. 16.7

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. 16.8)


Fig. 16.8

⚠ CAUTION

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. 16.9)

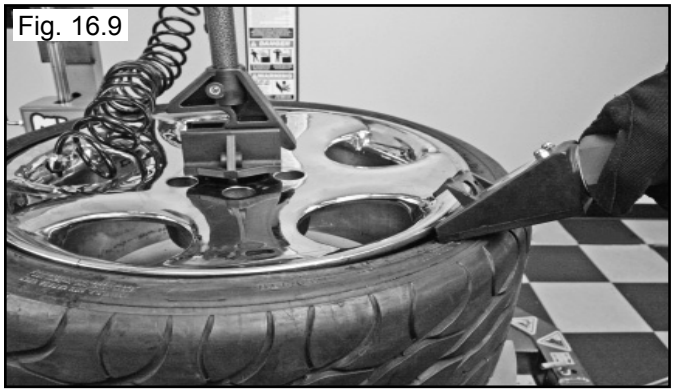


Fig. 16.9

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. 16.10)


Fig. 16.10

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 operator 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.

TIRE INFLATION

WARNING

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. 16.11)

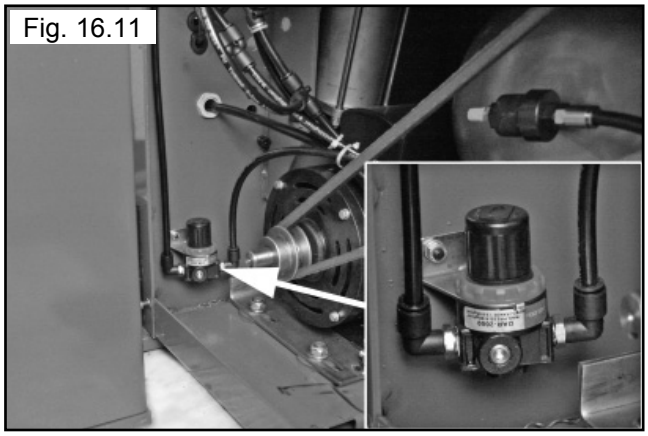


Fig. 16.11

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

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. 16.12)

⚠ WARNING

WARNING!

KEEP HAND AND FINGERS CLEAR!
KEEP ENTIRE BODY AWAY FROM THE TIRE.



Fig. 16.12

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. 16.13)

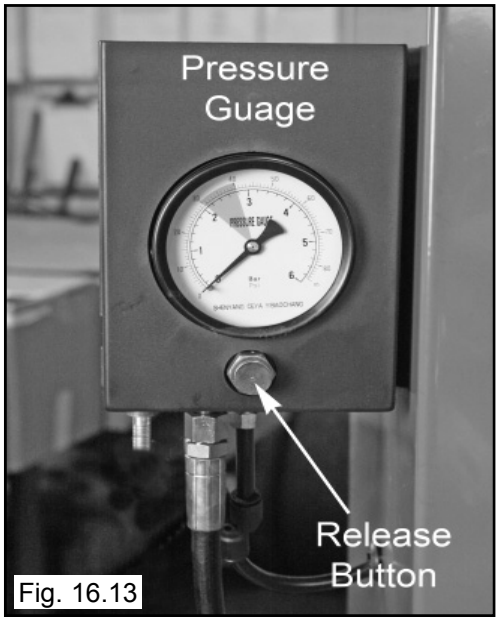


Fig. 16.13

⚠ WARNING

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

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.

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

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

DANGER!
IMPORTANT
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 outside 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. 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 the gauge is defective, replace it immediately.

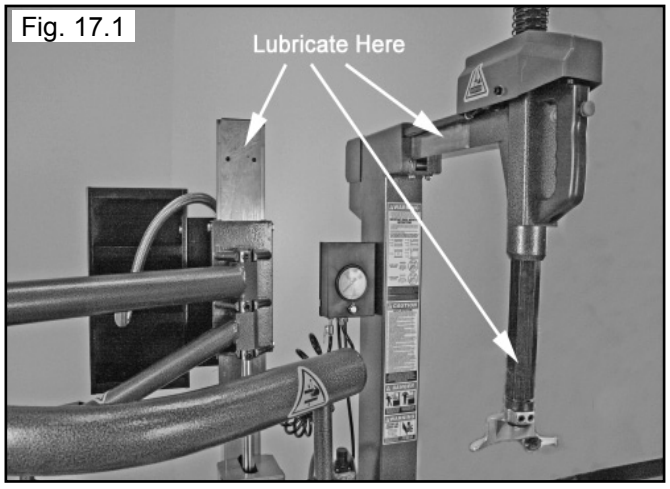
♦ Make sure all fasteners are securely tightened and all guards and covers are in place.

♦ 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 - 17.3)

Fig. 17.2

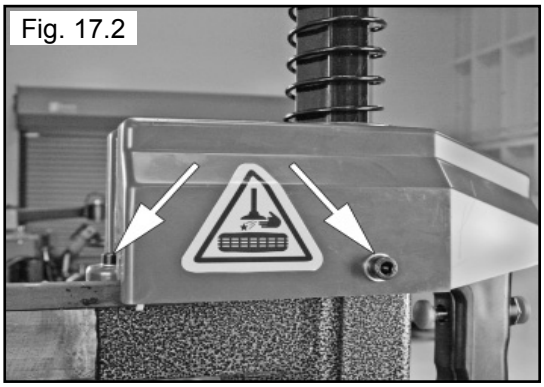
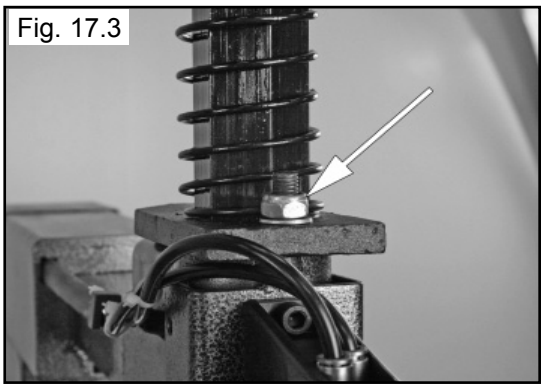


Fig. 17.3



Mount/Demount Head Cleaning

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

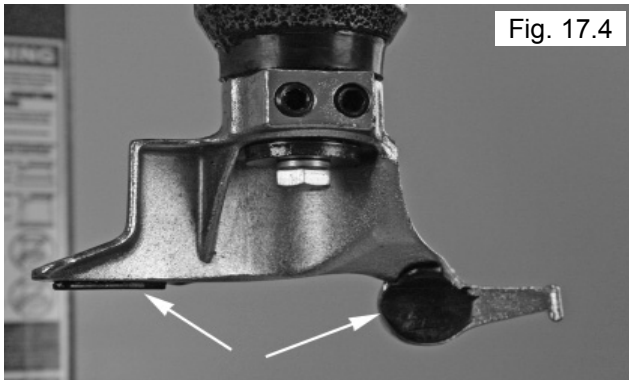


Fig. 17.4

Water Separator/Lubricator Maintenance

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

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

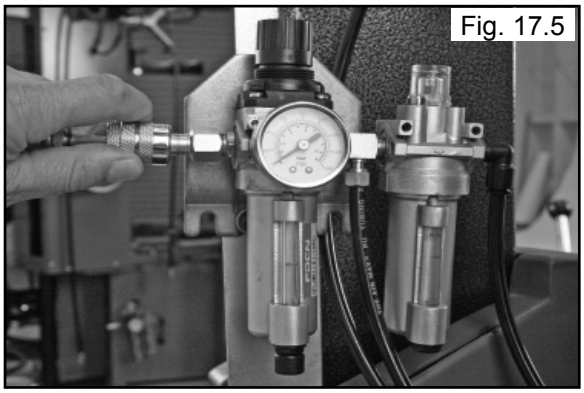


Fig. 17.5

2. 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)

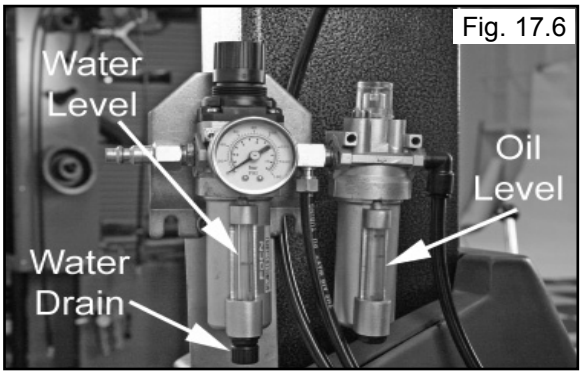


Fig. 17.6

3. 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.

4. Reconnect the air when service/adjustments are complete.

Oiler Adjustment

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)

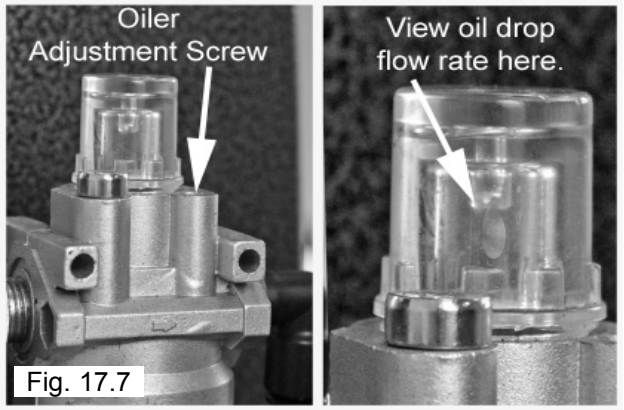


Fig. 17.7

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

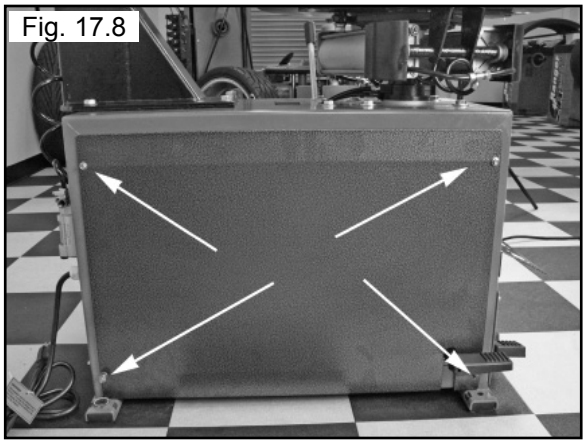
3. Reconnect the air supply when service/adjustments are complete.

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.

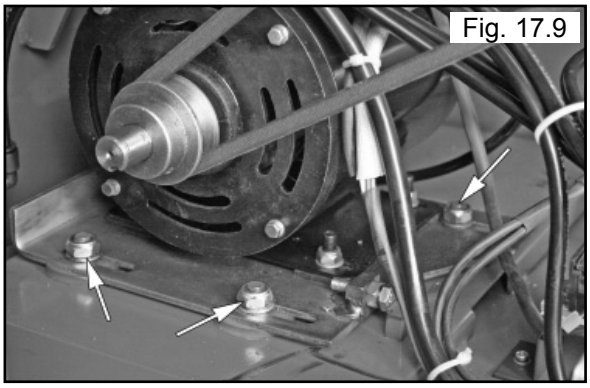
1. Remove the Side Panel. (See Fig. 17.8)

Fig. 17.8



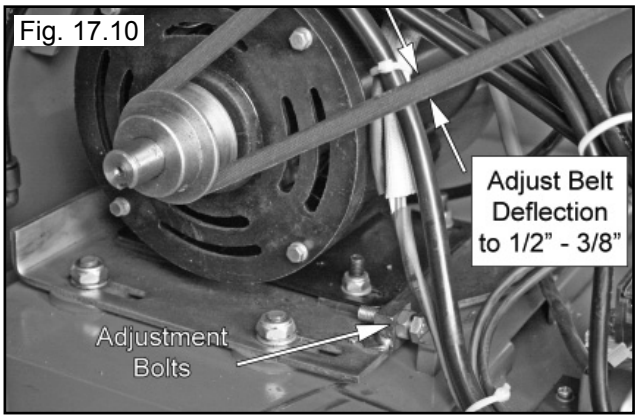
2. Loosen the four Motor mounting / adjusting bolts and nuts. (See Fig. 17.9)

Fig. 17.9



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 complete. (See Fig. 17.10)

Fig. 17.10



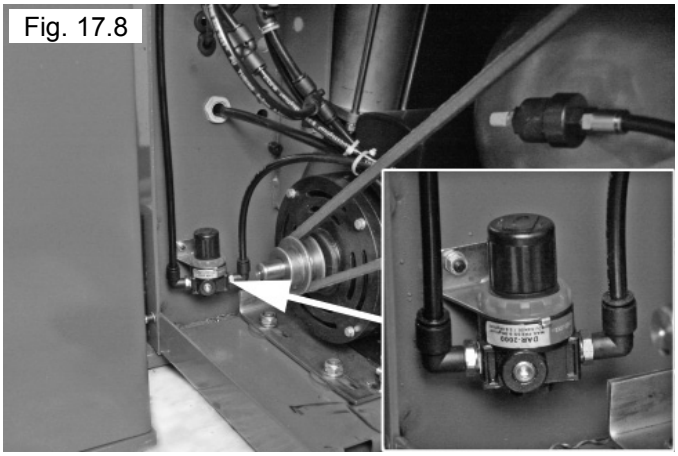
Inflation Pedal Pressure Limiter Maintenance

⚠ 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

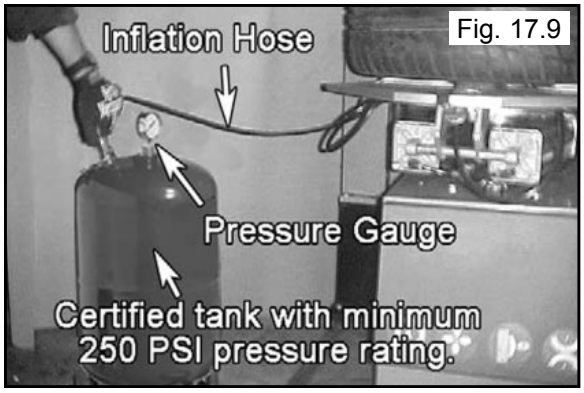


Check operation of the pressure limiter as follows at least once a month:

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.

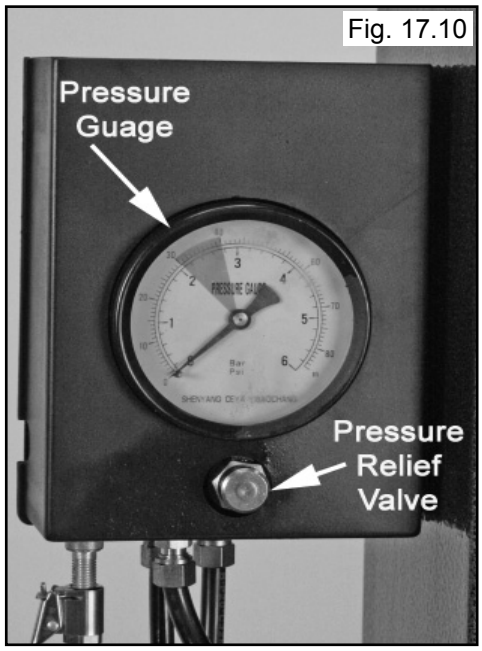
4. Watch the rising pressure on the tank gauge and the gauge on the machine. As tank pressure reaches 60 PSI, the pressure limiter should stop the air flow automatically. Both gauges should read 60 PSI ± 5 PSI.

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



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

CAUTION



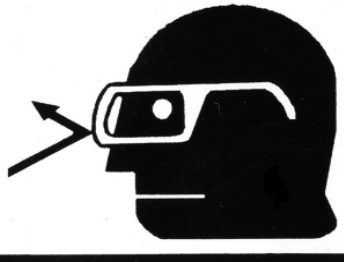
KEEP HANDS CLEAR OF BEAD AREA WHEN INFLATING.

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

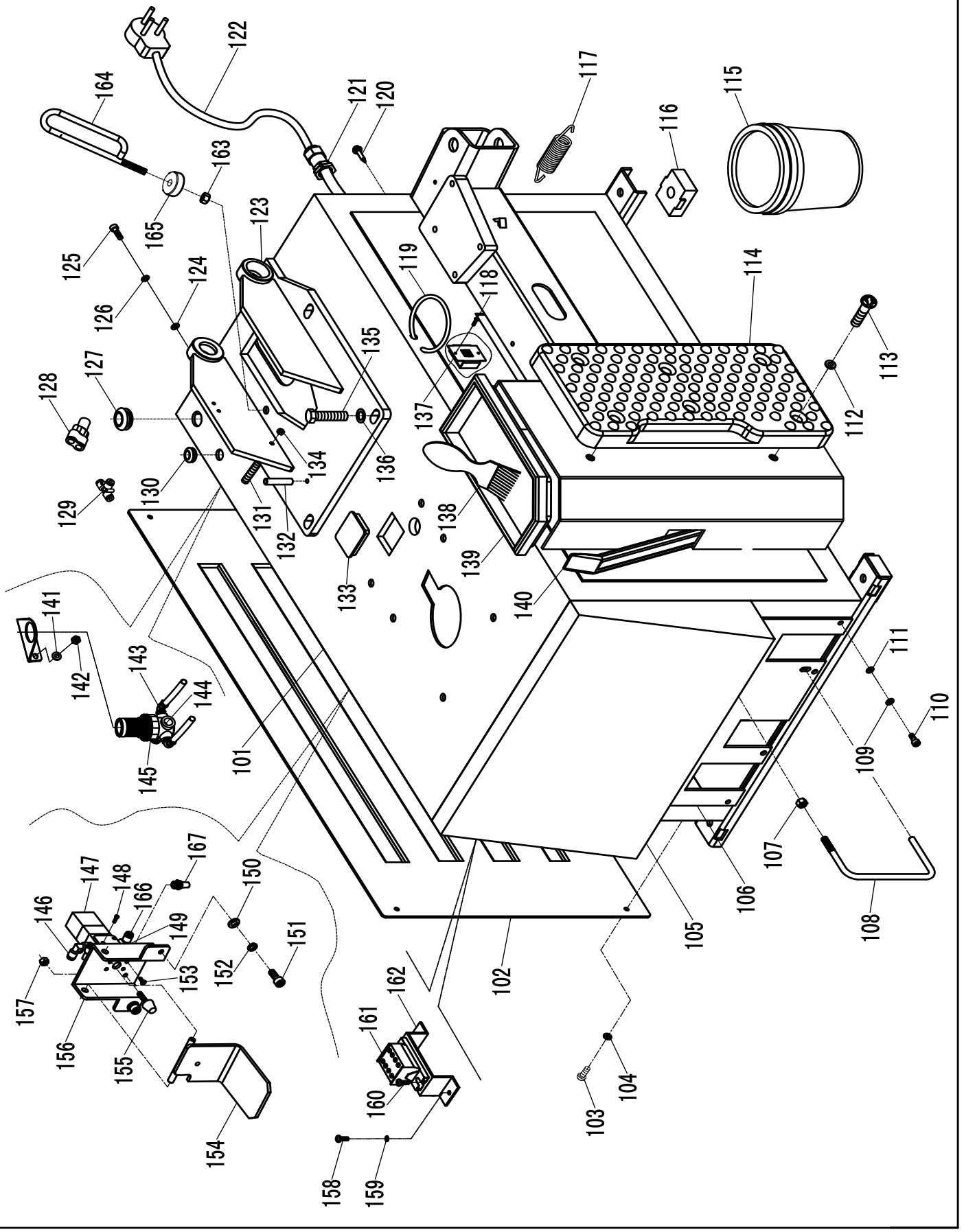
CAUTION

READ FIRST

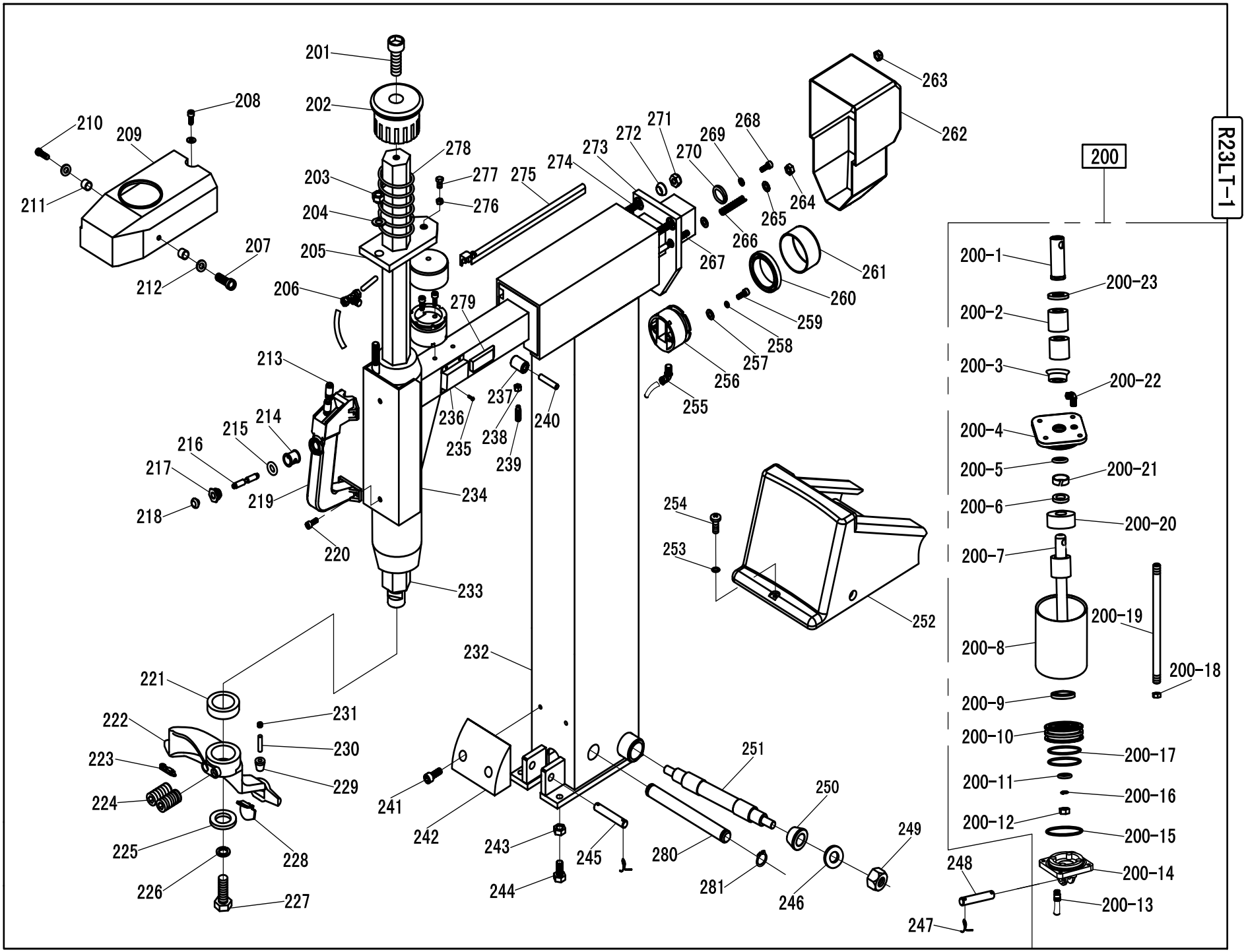
- ✔ Be sure to *READ ALL WARNING LABELS* and instruction manual prior to operation of this machine. Failure to comply with proper safety instructions may lead to serious harm or even death of operator and/or bystanders.
- ✔ Improper operation of this machine may cause damage to machine or cause personal 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!

R23LT-1


101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
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
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167

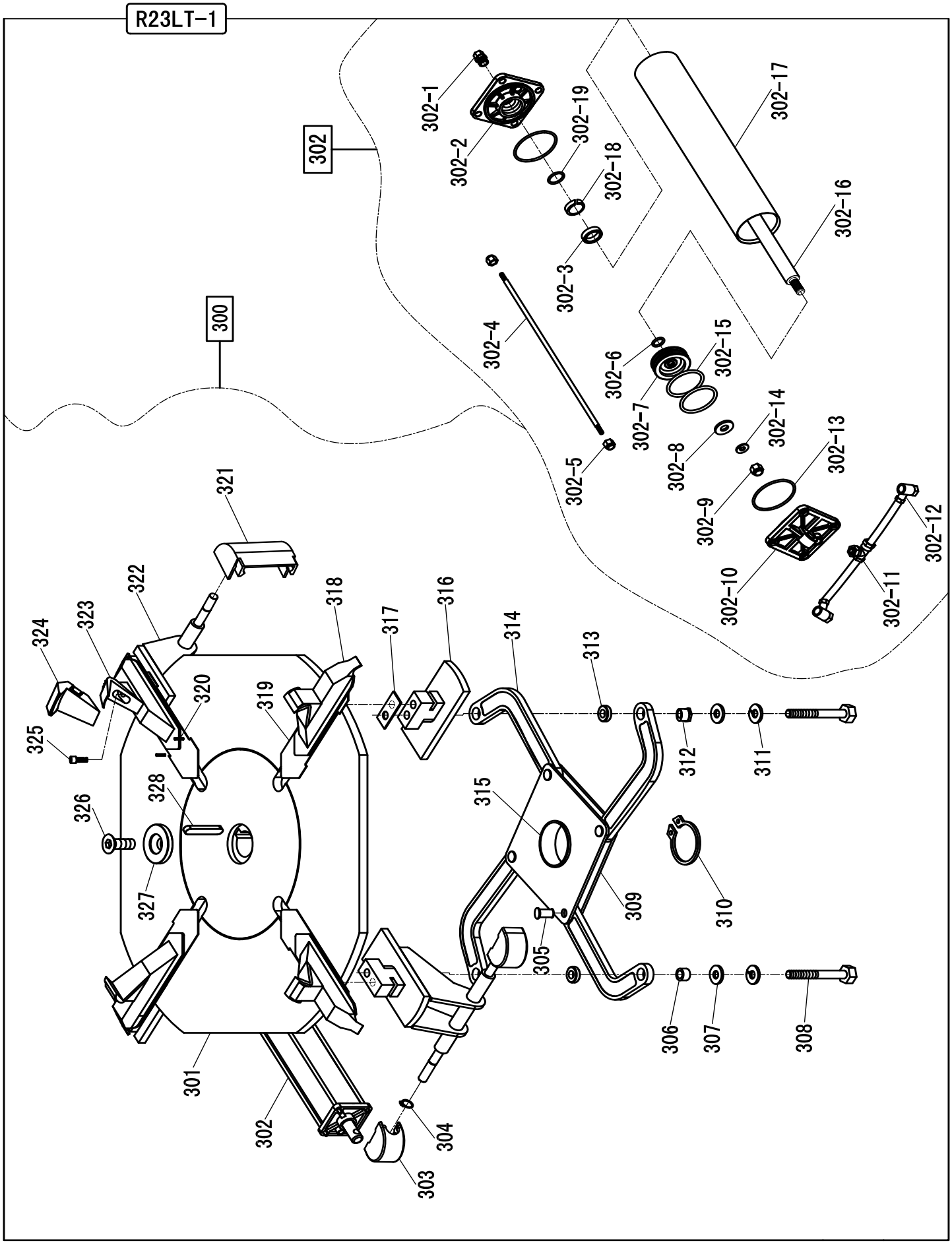
S/N	DESCRIPTION
101	chassis body
102	side cover
103	screw M6×20
104	washer φ6
105	pedal cover
106	chassis front board
107	Nut M8
108	pedal divider
109	washer φ6
110	screw M6×16
111	washer φ6
112	washer φ6
113	screw M6×20
114	wheel support
115	grease cup
116	plastic foot
117	spring φ3Xφ25X23X140
118	screw M3×10
119	cup support
120	screw M5.5X25
121	cable holder
122	water proof cable
123	column base
124	washer φ5
125	screw M5X20
126	washer φ5
127	cable holderφ16
128	Y-Union
129	T-Union
130	cable holderφ12
131	screw M10×40
132	pin Φ6X40
133	block
134	screw M10
135	bolt M12×70
136	washer φ12
137	switch changer 110V/220V
138	brush
139	plastic cover
140	bead lifting level
141	washer φ5
142	nut M5
143	quick union G1/4″φ8
144	block
145	relief valve
146	quick union G1/4″φ8
147	valve
148	screw
149	block
150	washerφ8
151	screw M8×16
152	washer φ8
153	screw
154	inflating pedal
155	inflating pedal limit
156	inflating pedal support
157	nut M6
158	screw M6
159	washer φ6
160	screw
161	connecting terminal
162	connecting terminal support
163	nut M8
164	column limit rod
165	small polyurethane washer
166	quick union G1/8″
167	silencer


200
200-1
200-2
200-3
200-4
200-5
200-6
200-7
200-8
200-9
200-10
200-11
200-12
200-13
200-14
200-15
200-16
200-17
200-18
200-19
200-20
200-21
200-22
200-23
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281

200	cylinder unit
200-1	cylinder press bushing
200-2	rubber ring
200-3	plastic shock absorber
200-4	cylinder front flange
200-5	O-ring
200-6	Y-ring
200-7	piston rod
200-8	cylinder cover
200-9	shock absorber cylinder pad
200-10	helical cylinder rod
200-11	O-ring
200-12	nut
200-13	union
200-14	cylinder back flange
200-15	O-ring
200-16	washer φ12
200-17	O-ring
200-18	nut M8
200-19	cylinder bolt
200-20	front flange
200-21	belt
200-22	union
200-23	washer
201	screw
202	outer pipe unit
203	locking nutM10
204	washer φ10
205	vertical shaft locking plate
206	union
207	screw M6×20
208	screw M6×20
209	locking plate cover
210	screw
211	plastic bush
212	washer φ6
213	quick union G1/8″φ6
214	robot control unit
215	O-ring
216	control valve shaft
217	control valve flange
218	control valve button
219	control valve
220	screw M5×12
221	working head bushing
222	working head
223	working head pad

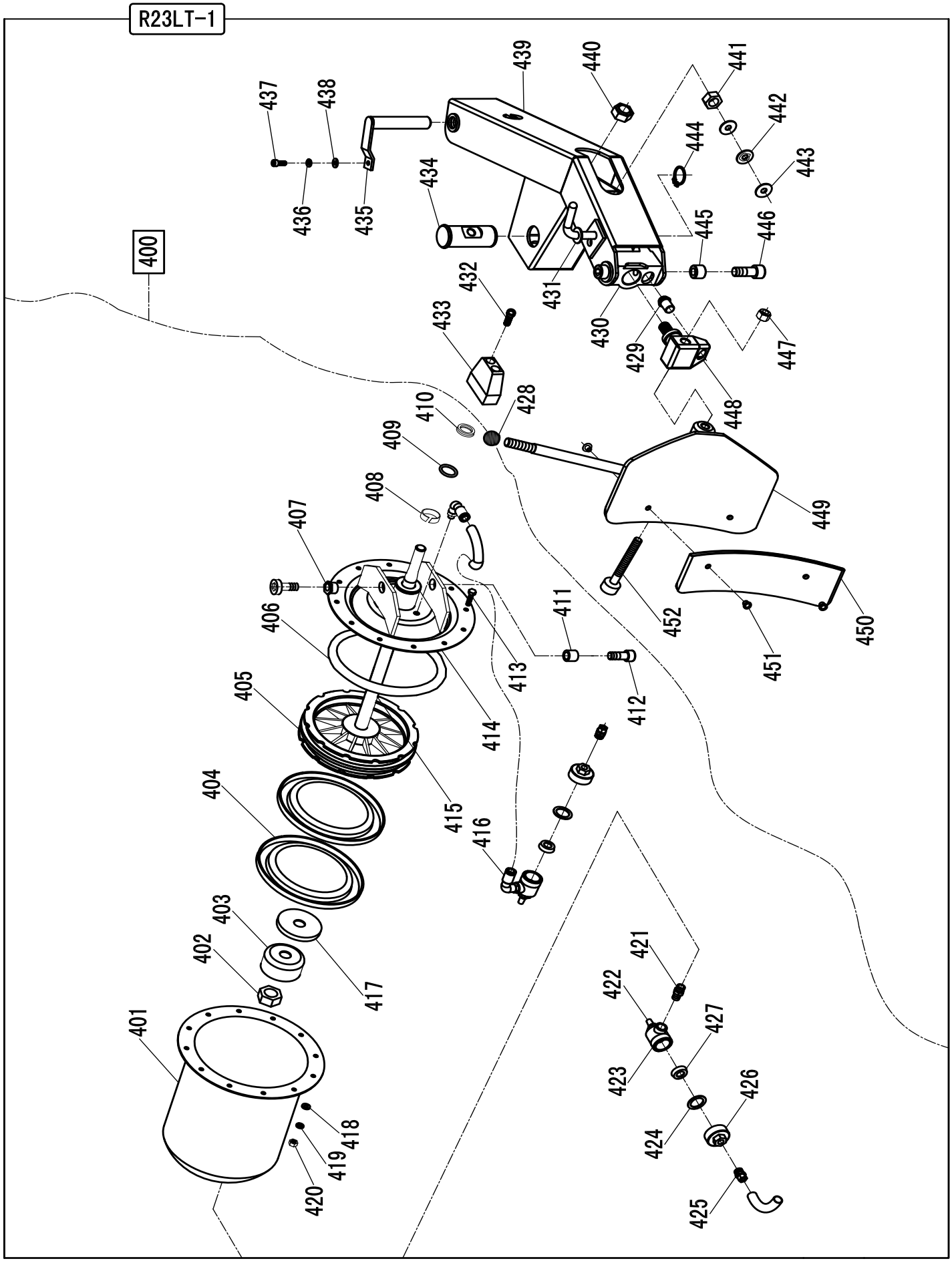
224	pin M10×20
225	plstic pad
226	washer φ10
227	bolt M10×20
228	plastic insert
229	roller
230	pin Φ5X22
231	roller pin M6×6
232	tower assy unit
233	vertical shaft
234	horizontal arm unit
235	screw
236	shock absorber bracket
237	roller
238	nut M8
239	screw M8×40
240	pin Φ8X40
241	screw M6×20
242	dust proof guard
243	nut M10
244	bolt M10×30
245	cylinder connecting shaft 2
246	washerφ3X25
247	pin φ3X25
248	connecting shaft 1
249	locking nutM12
250	cone bushing
251	articulated pin
252	column guard
253	washer
254	screw
255	union G1/8″φ6
256	valve base
257	washer φ6
258	o-ring φ7X1.9
259	screw M6×40
260	Y-ring φ60
261	locking piston
262	tilt back cover
263	locking nut M8
264	nut M8
265	washer φ8
266	pressing spring
267	locking plate screw
268	screw M6×16
269	washer φ6
270	presser pad

271	locking nut M10
272	horizontal shaft limit block
273	horizontal shaft locking plate
274	screw
275	hose liner
276	nut M12
277	boltM12X25
278	vertical shaft pressing spring
279	rubber pad
280	column limit shaft
281	seeger ring φ20


R23LT-1
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
302-1
302-2
302-3
302-4
302-5
302-6
302-7
302-8
302-9
302-10
302-11
302-12
302-13
302-14
302-15
302-16
302-17
302-18
302-19

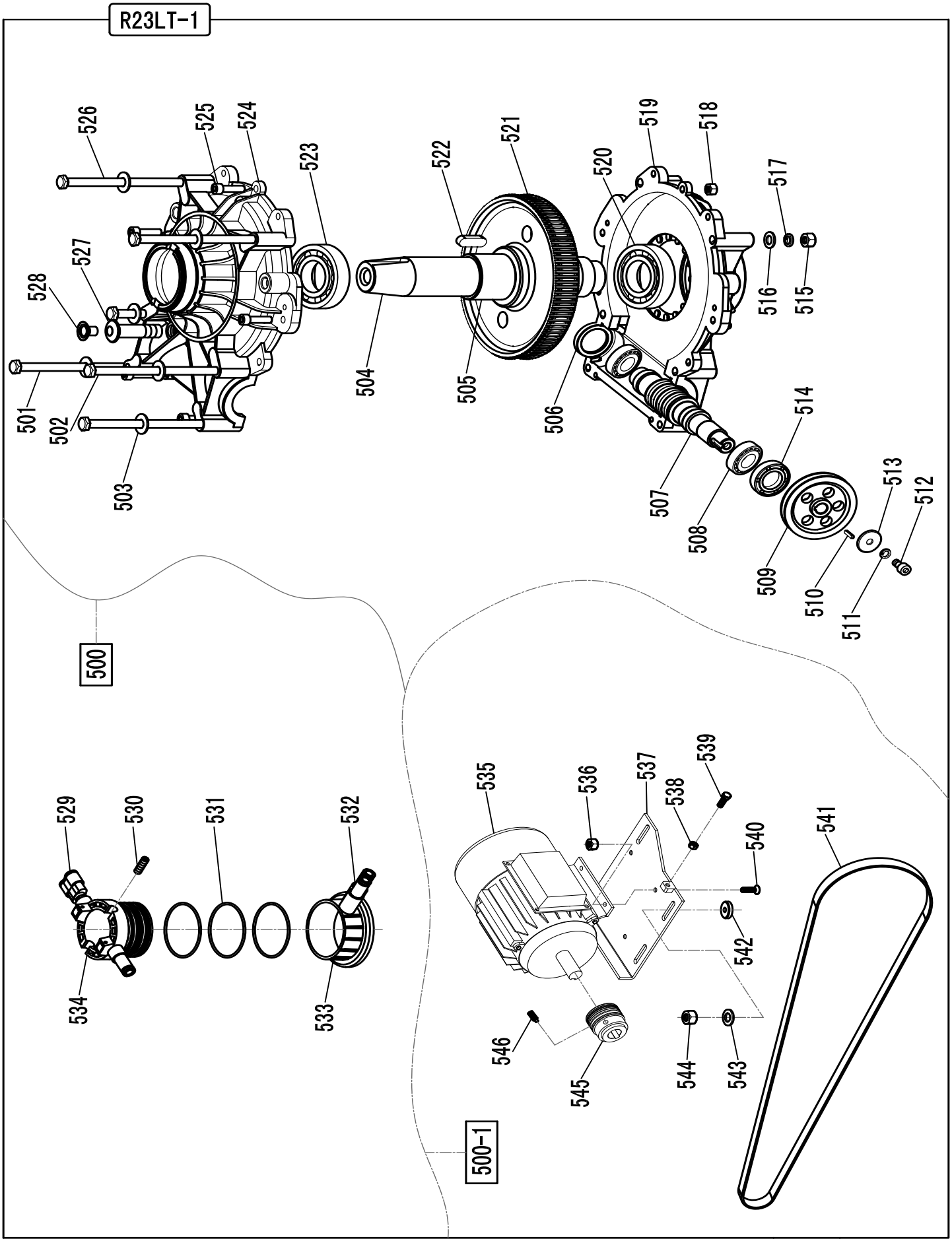
300	square turntable assembly unit
301	turntable unit
302	cylinder unit
302-1	union G1/8″φ8
302-2	front flange
302-3	Y-ring φ32X20X6
302-4	double side connecting bolt
302-5	locking nut M8
302-6	o-ring φ16X2.4
302-7	piston rod
302-8	washer φ12
302-9	locking nut M12
302-10	back flange
302-11	union
302-12	union G1/8″φ8
302-13	O-ring φ75X2.65
302-14	washer φ12
302-15	O-ring φ75X5.7
302-16	piston rod
302-17	cylinder liner
302-18	guidance tape4X2
302-19	O-ring φ25X3.1
303	cylinder front flanger guard
304	seeger ring φ12
305	turntable flange pin
306	connecting rod spacer
307	washer 12
308	bolt M12×45
309	control panel
310	seeger ring φ65
311	washer φ12
312	turntable flange eccentric bushing
313	turntable flange rod pad
314	control plate bracket
315	control plate bushing
316	slide guard welding
317	shim adjustment
318	slide
319	turntable plate
320	pin φ4X10
321	cylinder flange guard
322	slide guide
323	clamp
324	clamp cover
325	screw M10×25
326	screw M16×40
327	turntable pin

328	tab12X8X50

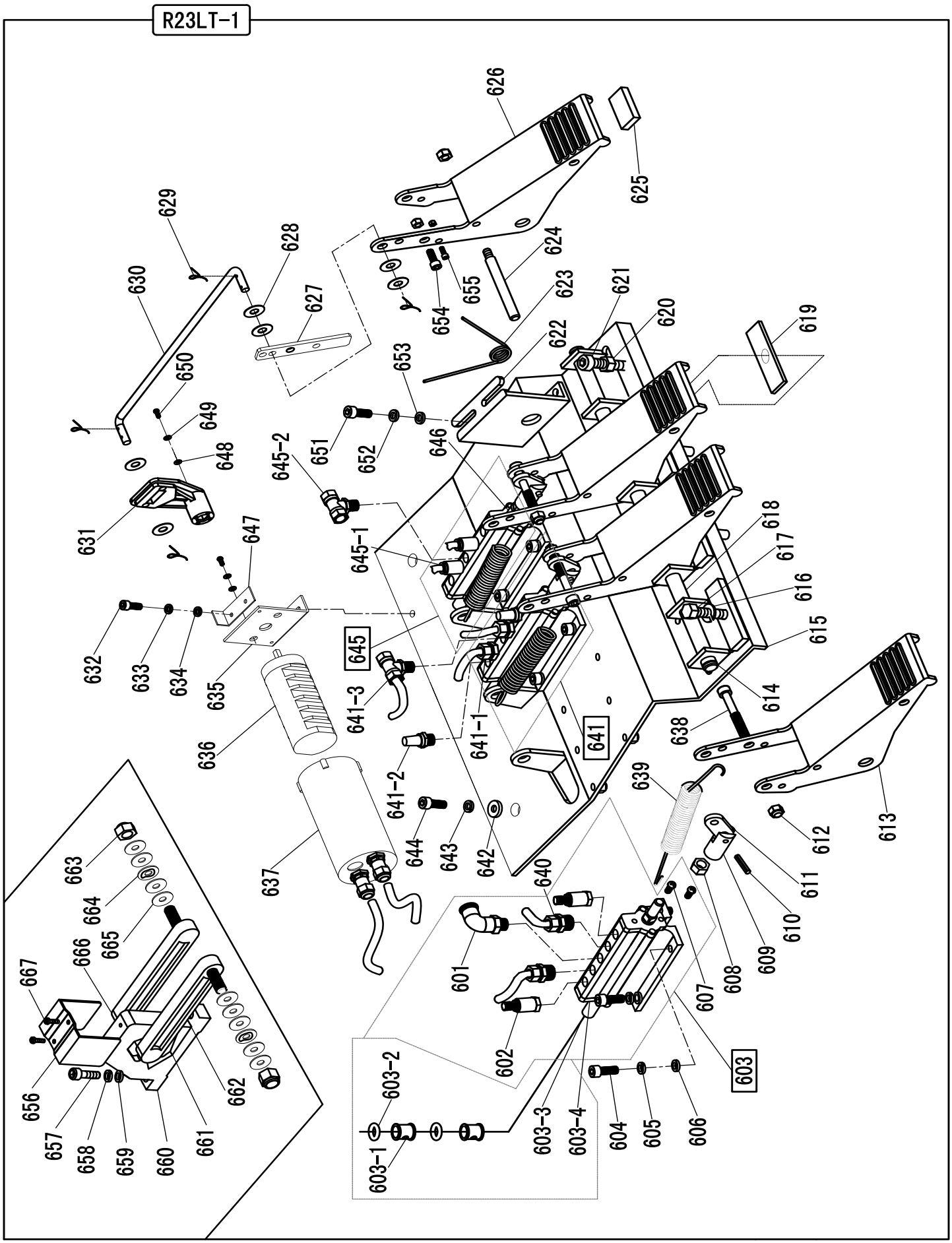

R23LT-1
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452

400	cylinder unit
401	cylinder liner
402	nut M18
403	limit stop
404	Y-ring φ200X12×6
405	cylinder piston
406	O-ring Φ193x5.7
407	eccentric bushing
408	guidance tapeφ200X12×6
409	O-ring Φ25x3.1
410	Y-ring φ25
411	connecting rod spacer
412	screw M12×30
413	bolt M6×16
414	cylinder flange unit
415	cylinder piston rod
416	brass union G1/4″φ10
417	limit stop spacer
418	washer φ6
419	washer φ6
420	nut M6
421	double nipple G1/4″φ10
422	silencer G1/4″
423	quick relief valve
424	quick relief valve spacer
425	union G1/8″φ10
426	quick relief valve
427	relief valve seal cup
428	bead breaker knob M12
429	bead breaker support pin
430	bead breaker bracket
431	bead breaker retaining pin
432	screw M6×25
433	breaker shock absorber
434	breaker arm shaft
435	breaker arm pin
436	washer φ6
437	screw M6×16
438	washer φ6
439	bead breaking arm unit
440	locking nut M16
441	locking nut M16
442	washer (wave)φ16
443	washer φ16
444	seeger ring φ35
445	bead breaking blade
446	screw M12×25

447	locking nut M14
448	blade bracket
449	bead breaking blade unit
450	blade cover
451	blade bolt
452	screw M14×95
400	cylinder assembly unit

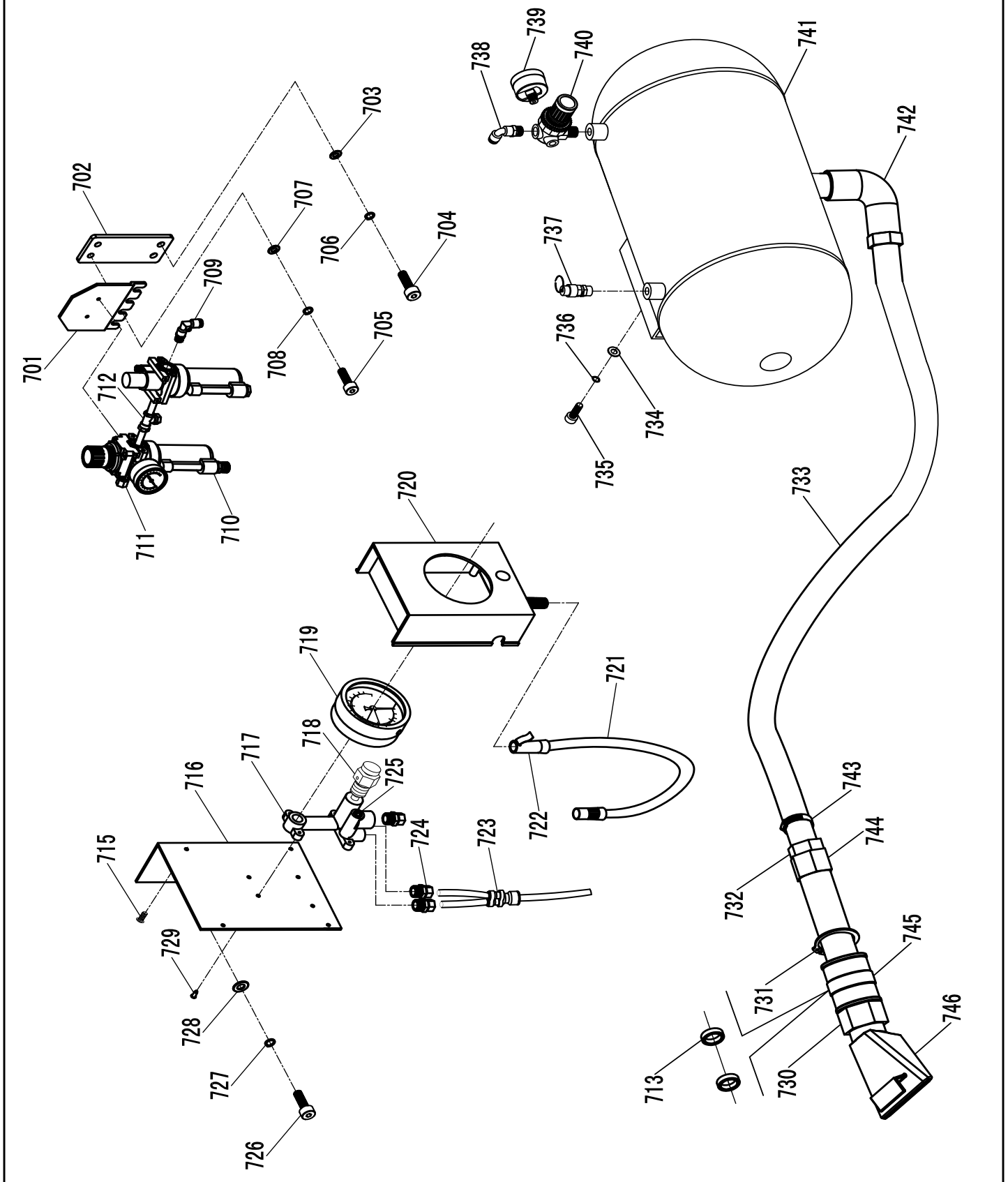

R23LT-1
526
525
524
523
522
521
519
518
517
527
528
520
516
515
501
502
504
505
506
503
514
507
508
513
512
509
510
511
500
529
530
531
532
535
536
537
539
538
540
541
534
533
542
546
545
544
543
500-1

500	reduction gearbox unit
500-1	rotating union
501	bolt M10×170
502	bolt M10×200
503	washer Φ10
504	vertical shaft (short)
505	bush
506	oil block 45×8
507	gear stud
508	bearing 7205
509	belt pulley
510	tab6X6X20
511	washer φ8
512	screw M8×16
513	gear stud pad
514	oil sealing Φ40X25X8
515	nut M10
516	washer φ10
517	washer φ10
518	nut M8
519	gearbox back flange
520	bearing 80208
521	helical gear
522	tab12X8X35
523	bearing 80110
524	gearbox front flange
525	screw M8×30
526	boltM10X180
527	oil pipe
528	oil cap
529	Y-quick union
530	jack bolt M6×20
531	O-ring φ60X2.65
532	quick union G1/4″φ8
533	rotating union outer bush
534	rotating union inner bush
535	power motor
536	locking nut M8
537	motor base unit
538	nut M8
539	bolt M8×40
540	screw M8×30
541	cone belt
542	big polyurethane pad
543	washerΦ10
544	locking nut M10
545	motor belt pulley (cone)
546	screw M8×16


R23LT-1
601
602
603
603-1
603-2
603-3
603-4
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
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
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667

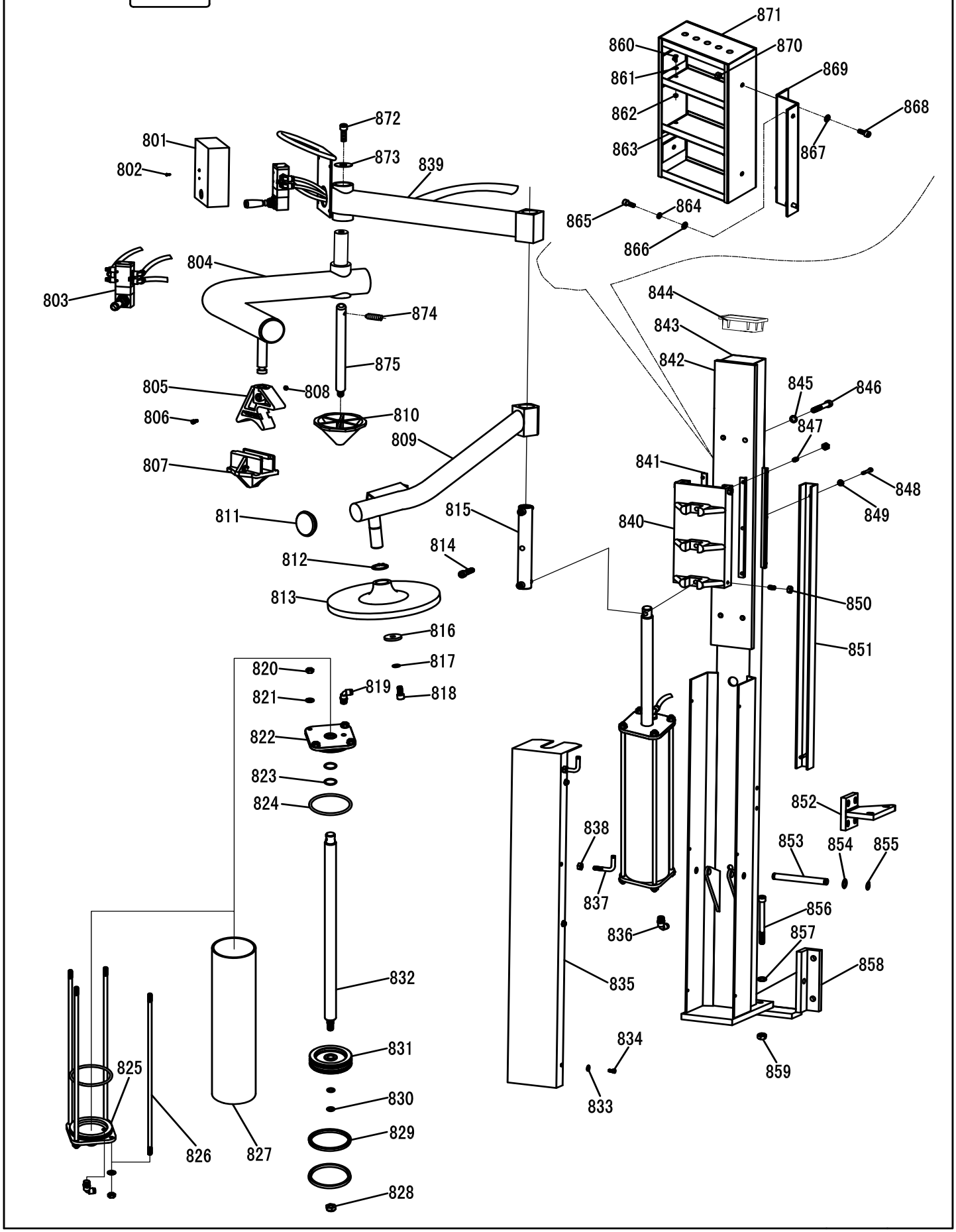
601	union G1/8″φ8
602	adjustable silencerG1/8″
603	tilt back valve unit
603-1	valve bracket
603-2	o-ring φ17X4
603-3	valve shaft
603-4	valve flange
604	screw M6×12
605	washerφ6
606	washerφ6
607	screw M4×10
608	nut M8
609	valve connector
610	pin φ4X18
611	valve rod
612	locking nut M6
613	pedal (right)
614	seeger ring φ12
615	base board
616	washer φ8
617	bolt M8X16
618	pedal shaft
619	control system adjusting pad
620	nut M8
621	screw M8×50
622	switch torsional spring support
623	torsional spring
624	switch limit
625	rubber block
626	pedal (left)
627	reverter connecter
628	spacer φ6
629	pin φ3X25
630	switch lever
631	reverter fork pin
632	screw M6×12
633	washer φ6
634	washer φ6
635	reverter bracket
636	reverter
637	reverter cover
638	screw M6×55
639	control panel spring
640	union G1/8″φ8
641	turntable valve unit
641-1	unionG1/4″φ8
641-2	silencerG1/4″
641-3	unionG1/4″φ8
642	spacer φ8
643	washer φ8
644	screw M8×20
645	cylinder valve unit
645-1	quick unionG1/4″φ10
645-2	unionG1/4″φ8
646	cylinder retaining bush
647	reverter limit board
648	washer φ5
649	washer φ5
650	screw M5×16
651	screw M6×16
652	washer φ6
653	washer φ6
654	screw M8×20
655	screw M6×20
656	cam guard
657	screw M6×20
658	washer φ6
659	washer φ6
660	controling cam
661	cam washer (straight)
662	cam washer (arc)
663	locking nut M8
664	washer (wave)
665	washer φ8
666	limit level
667	screw M3×10

R23LT-1


701
702
703
704
705
706
707
708
709
710
711
712
713
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746

701	support
702	support plate
703	washer φ8
704	screw M8×20
705	screw M8×16
706	washer φ8
707	washer φ8
708	washer φ8
709	quick unionG1/8″φ8
710	air filter with two cups
711	union
712	union
713	Y-ring
715	self-tapping screw
716	inflating gauge base
717	air connecting bracket
718	relief valve
719	inflating gauge
720	gauge cover
721	hose
722	Y-connector
723	union
724	union G1/8″φ8
725	block
726	screw M6×20
727	washer φ6
728	washer φ6
729	self-tapping screw M4X16
730	nylon connector
731	seeger ring φ40
732	1″connector
733	inflating hose1″
734	washer φ8
735	screw M8×25
736	washer φ8
737	safety valve
738	quick union G1/4”φ8
739	pressure gauge 1/8
740	pressure regulating valveZG1/4″
741	bead blaster unit
742	1″elbow
743	throat
744	plastic knob
745	bead blaster valve
746	nylon blaster jet

R23AT-1


871
860
870
861
869
862
868
863
867
872
801
873
802
839
865
864
866
804
844
803
874
843
842
875
845
846
805
808
847
806
810
809
841
807
848
811
815
849
840
814
812
850
813
816
851
817
820
819
818
821
822
852
823
853
854
855
824
838
837
856
836
857
858
832
835
831
834
825
830
859
829
826
827
833
828

801	controling valve flange
802	screw M4×30
803	valve
804	presser arm unit
805	presser head
806	screw M6×30
807	presser block
808	nut M6
809	swing arms unit
810	cone
811	sealing stub
812	seeger ringφ25
813	plate support
814	screw M10×45
815	conneting sha
816	seeger ring
817	washer φ10
818	screw M10×25
819	quick union G1/4”φ6
820	nut M8
821	washer φ8
822	cylinder front flange
823	O-ring φ30X2.6
824	O-ring φ94X3.15
825	cylinder back flange
826	cylinder connecting thread
827	cylinder liner
828	locking nut M12
829	Y-ring94X84X6
830	O-ring φ14X2.5
831	piston
832	piston rod
833	washer φ8
834	screw M6×10
835	cylinder guard
836	quick union G1/4”φ6
837	inflating gun hook
838	nut M8
839	presser arm unit
840	slide
841	slide holding strip
842	slide guide
843	square tower assy unit
844	tower assy cover
845	washer φ10
846	screw M10×75
847	screw M8X25

848	screw M6×40
849	washer φ6
850	nut M8
851	air hose cover
852	chassis support unit
853	cylinder retaining pin
854	washer φ12
855	seeger ring φ12
856	screw M10×120
857	washer φ10
858	lower supporter unit
859	nut M10
860	screw M4
861	washer φ4
862	nut M4
863	spacer
864	washer φ8
865	screw M8×16
866	washer φ8
867	washer φ8
868	screw M8×12
869	tool case bracket
870	nut M8
871	tool case unit
872	screw M12
873	washer
874	roller latch
875	retaining rod



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

pn# 5900173

BendPak® PROVIDING AUTOMOTIVE SERVICE SOLUTIONS

Ranger™ PRODUCTS