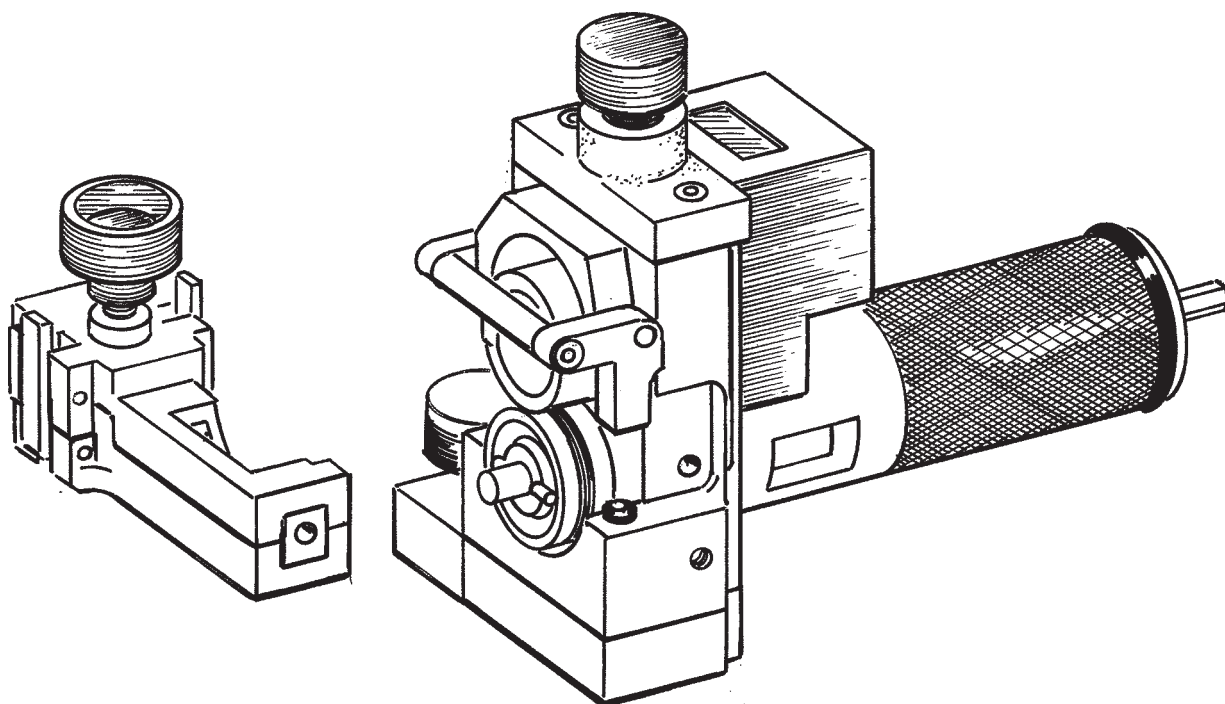




Model F7.5
FIBER OPTIC CABLE
PLACING EQUIPMENT

Parts &
Accessories



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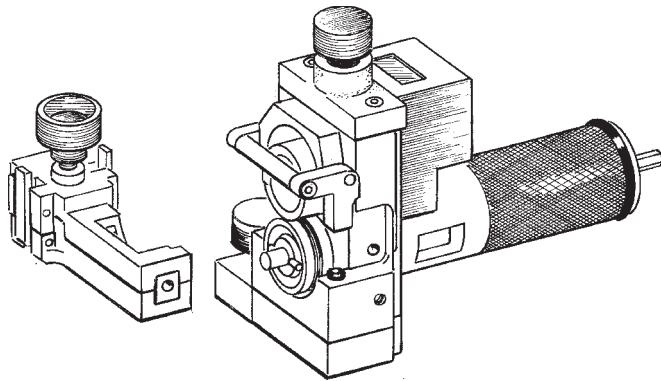
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INTRODUCTION



IMPORTANT INFORMATION

Publication of this manual and the safety precautions in it does not in any way represent an all inclusive list. It is the operator's responsibility to make sure the machine is operated in accordance with all state and local safety requirements and codes, including all applicable OSHA (Occupational Safety and Health Act) and ANSI (American National Standards Institute) regulations.

Should a problem or unsafe condition arise, shut the machine down using the normal shut-down procedure. In the event of an emergency, use the emergency stop procedure. Notify the proper authority or follow your employer's prescribed procedure for an emergency situation.

Sherman & Reilly strongly recommends that only persons literate and understanding the English language be considered as operators or service personnel for *Ultimaz* equipment.



MICROJET ULTIMAZ (Patent Pending)

Sherman & Reilly's ULTIMAZ F7.5 is a fiber drop cable placing unit designed for installing fiber optic drop cables in microducts for Fiber-to-the-Premise (FTTP) and, in particular, MDUs. ULTIMAZ F7.5 is dedicated to these specific microcables and microducts. ULTIMAZ features a bi-directional drive system, fixed torque limiter, digital backlit footage counter/speed indicator, air pressure gauge to monitor air pressure during cable placing, standard tools, and a durable vinyl carry case. A full line of accessories is also available. The drive system is powered by a cordless drill (not included) and uses an air compressor or nitrogen bottles (not included) to Jet cables through microduct systems. ULTIMAZ is ideal for Multiple Dwelling Units (MDUs) where cable routes are short but tortuous and difficult to pull. Typical installation speeds are between 100-600 FPM in which the cable is installed virtually stress free.

ADVANTAGES

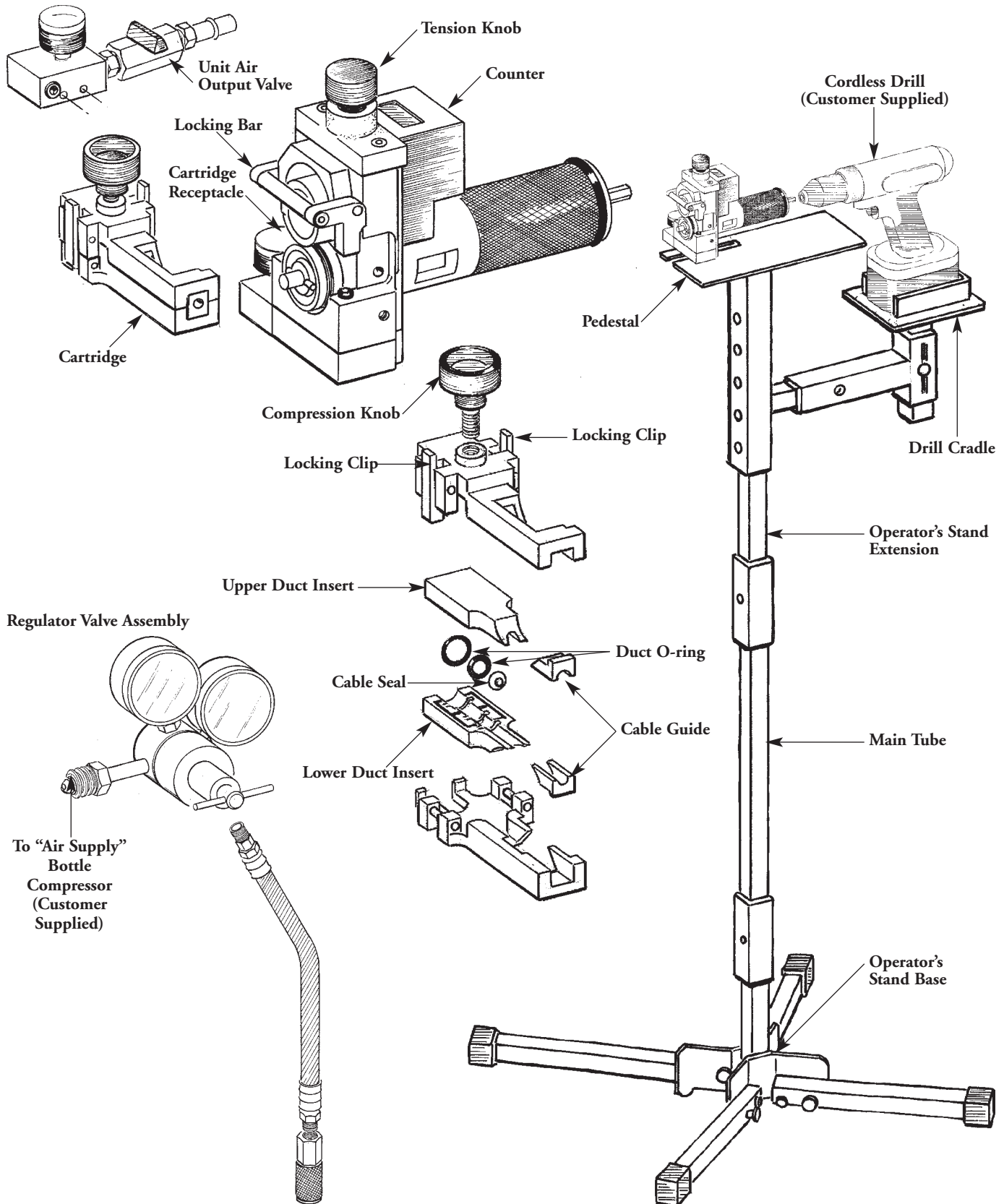
- Lightweight and portable (may be handheld)
- User friendly operation
- Fast installations in MDU trajectories
- Torque Limiter for fiber cable protection
- Inside or Outside plant use
- Low compressed air requirements (small compressors or nitrogen bottles)
- Full line of accessories available

GENERAL SPECIFICATIONS

Bare Weight	3.7 lb.
Maximum Push Force7N / 1.57 lb.
Maximum Radial Pressure	Automatic (Pre-set to your cable)
Torque Limiter	Automatic (Pre-set to your cable)
Vinyl Carry Case	Included
Footage Counter/Speed Indicator	Included
Maximum Air Pressure	12 bar (150 PSI)
Air Flow Rate	0-50 CFM (depending upon duct size)

*Manufacturer reserves the right to make improvements. Dimensions, weights, and capacities are approximate. Manufacturer's specifications subject to change without notice.

TERMS YOU NEED TO KNOW



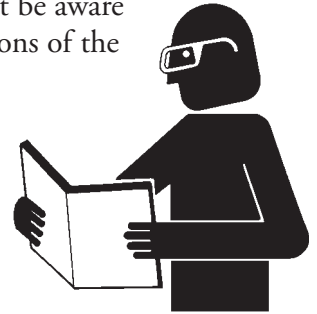
SAFETY

IMPORTANT INFORMATION

It is very important to all of us at *Sherman & Reilly* that every machine is operated in a safe manner. We have taken every precaution to guard against the possibility of an accident. To properly, safely operate this machine, it is necessary and important that operators and service people read and understand the information in this and the engine manufacturer's manual. **ANYONE working around the machine should read the safety precautions in the manuals.** Be aware each warning and precaution is to help protect against needless injury. Taking unnecessary risks and ignoring warnings is the primary cause of personal injury and fatal accidents in the work place. If you have any questions regarding operation or safety of a procedure or situation, contact the *Sherman & Reilly* Customer Service Manager at **1-800-251-7780**.

This manual was prepared to help the operator use and service the machine in a safe manner. Responsibility for safety during operation and service rests with the person(s) doing the work. Be alert, observe, and practice all safety measures, including OSHA requirements and ANSI standards, to help prevent the possibility of an accident.

This manual is of no value if the operator does not read and understand the instructions and precautions (before starting and trying to operate the machine). The operator must be aware of the capacities and limitations of the machine. It is the operator's responsibility to watch for situations and conditions which could affect the normal performance of the machine and safety in the work area.



WARNING TERMS

Signal words in this manual call the operator's attention to safety concerns.

DANGER

The word **DANGER** indicates the information relates to a specific immediate hazard which, if disregarded, will result in severe personal injury or death.

WARNING

The word **WARNING** indicates the information relates to a specific immediate hazard or unsafe practice which, if disregarded, could result in personal injury or death.

CAUTION

The word **CAUTION** indicates the information pertains to a potential hazard or unsafe practice which, if disregarded, may result in minor personal injury or equipment damage.

NOTE

The word **NOTE** indicates the information is important to the correct operation or maintenance of the machine.

OPERATOR SAFETY PRECAUTIONS

DANGER

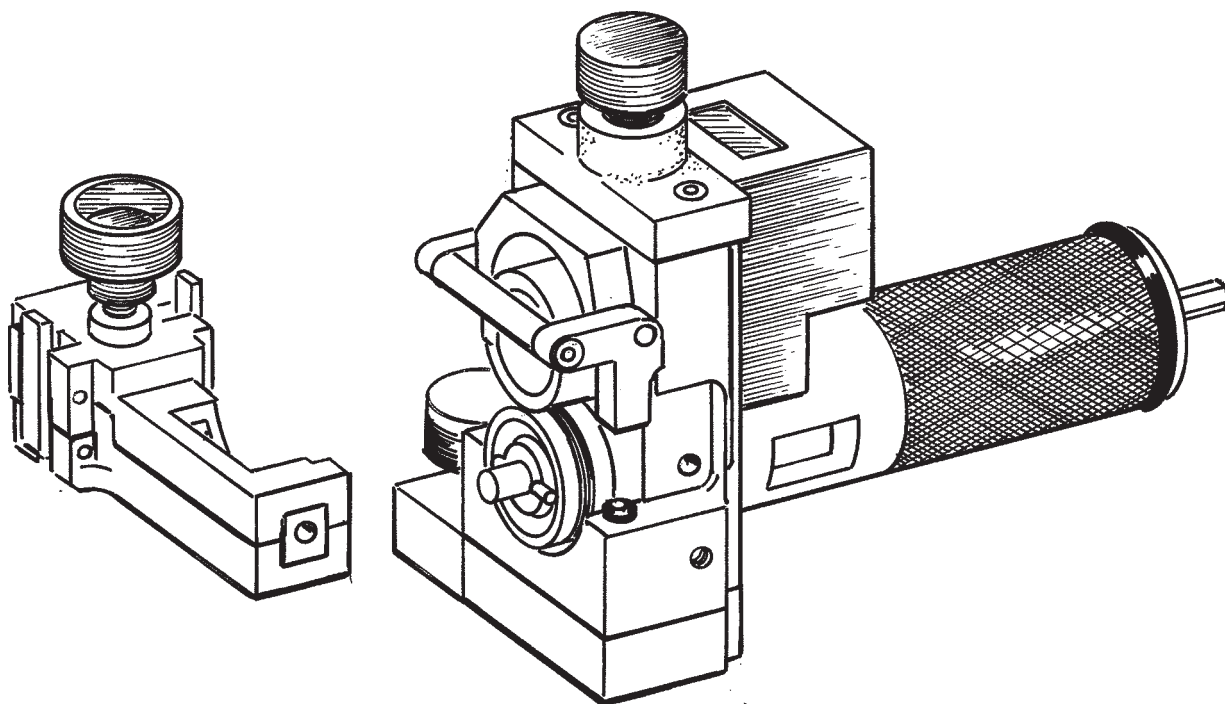
Do not place any part of the body into a potential pinch point. The machine must be turned off and locked out in accordance with OSHA regulations before attempting to correct a problem, working on the machine, or performing regularly scheduled service.

- Do not attempt to operate **Sherman & Reilly** equipment without proper instruction, including reading and understanding the manual.
- Obey and enforce all warnings including OSHA requirements and ANSI standards.
- Always wear proper safety equipment as required by employer. A respirator or particle mask is also recommended.
- Never bypass safety switches or operate equipment with faulty safety devices.
- Be sure all guards and access covers are securely in place when the machine is being operated.
- Be aware of people in the work area who may be at risk during operation.
- Know all emergency shutdown procedures.



- Ensure communications are working at all stations and that start and stop signals are understood.
- Always warn downstream personnel when air is to be sent through the system.
- Stay clear of exit end of duct when under pressure.
- Never operate equipment while under the influence of any substance which could impair operator ability or judgement. This presents a safety hazard in the work place.
- Do not operate equipment if work ability is impaired by fatigue, illness, or other causes.
- Keep all body parts, head, and limbs away from all moving parts.
- Know location and function of all controls, gauges, instruments, and protective devices.
- Never use controls or hoses for hand holds.
- Do not exceed unit specifications and limitations.
- Know where to get help in the event of an emergency or injury.





MICROCABLE IN MICRODUCT INSTALLATION FOR MDUS

ULTIMAZ F7.5 is designed to fit the below listed specific microduct and microcable/fiber drop diameters:

- Duct Outer Diameters: 8.5 mm; 12.7 mm
- Cable Outer Diameters: 3.0 mm; 2.0 mm

To be sure of cable/duct compatibility, measure the microduct and microcable with digital calipers to determine their exact outer diameters. They must be compatible with the ULTIMAZ duct & cable insert and seals in order to perform properly. If your specific duct and/or cable is not sized properly for the insert provided, contact the factory for the proper insert.

The ULTIMAZ drive mechanism is also designed specifically for pushing fiber cables of the above referenced diameters and construction characteristics. This is to install them safely without over-driving them in the event of an abrupt stop. Heavier stiffer cables may have limited performance.

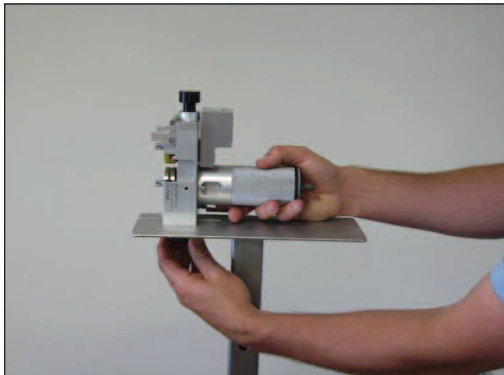
BEFORE STARTING

- Know your tool for proper instruction. Review the Terms You Need To Know on page 1.2.
- Know what type of air supply you will be using (compressor or bottled gas) and air flow requirements for your installation.
- Be aware of all safety requirements for use of high pressure air or gas.
- Be sure all nitrogen bottles are full or have sufficient gas for your job.
- Be sure all cordless drill batteries are charged.
- Be sure all communication device batteries are charged.

NOTE

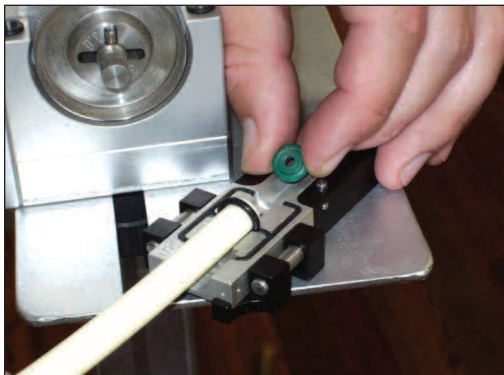
Before set-up, turn the tension control knob counter clockwise to open the cartridge receptacle in the unit. If this is not done the cartridge will not fit into the ULTIMAZ body receptacle in step 4. Never attempt to force the cartridge into the receptacle as damage to the unit could occur. If it does not install easily, the tension control knob is in the wrong position.

EQUIPMENT SET-UP

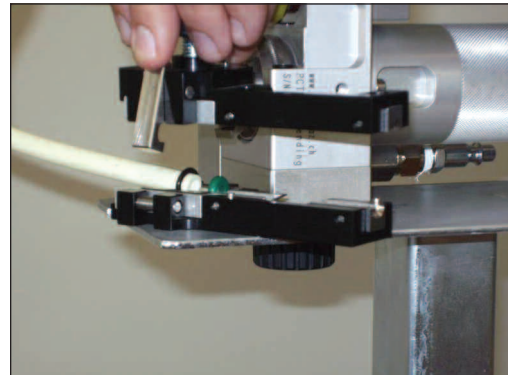


NOTE

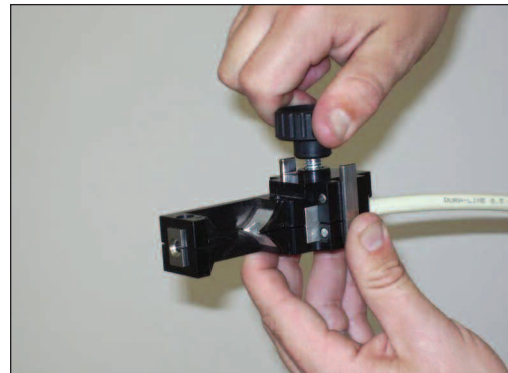
If using an operator's stand for ULTIMAZ, attach the unit to the stand pedestal by securing with black retaining knob provided prior to the following set-up and operating instructions.



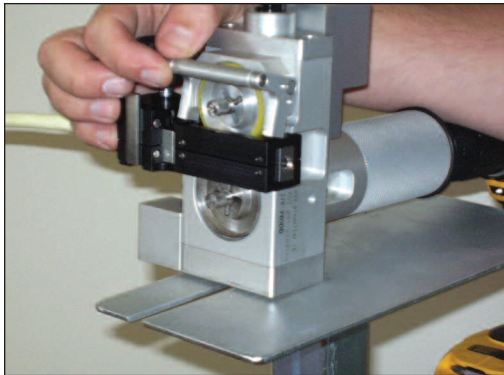
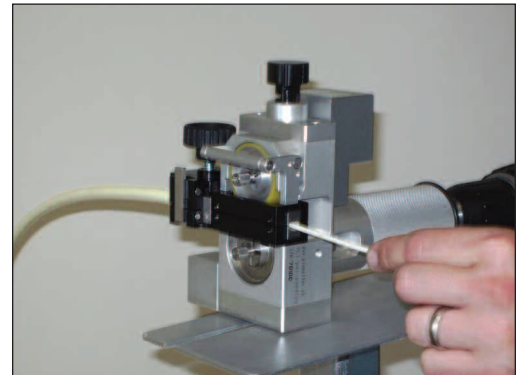
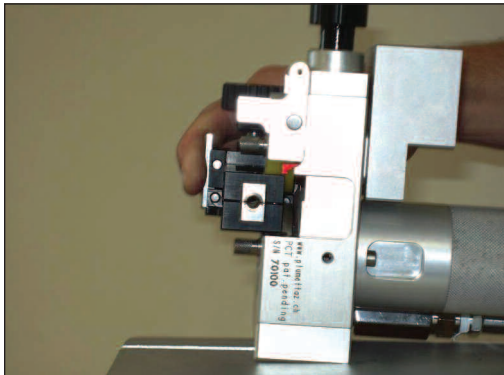
1. Holding the black duct/cable insert “cartridge” halves in one hand, or laying on a level surface such as the ULTIMAZ Operators Stand, install the silver duct/cable inserts into each half. The insert with the rubber sealing cord is ALWAYS on the bottom and is placed in the cartridge half without the compression knob. Place the proper size cable seal in the insert. The “grooved side” should be facing back into the cartridge. Next, place the correct size O-ring on the microduct end.



2. Insert the duct end in the inserts with the O-ring in the groove, while putting the two black cartridge insert halves back together by aligning the guide pin. Align the cartridge halves and press them together. Make sure the duct and O-ring and cable seal stay seated in the insert during the process. Once properly aligned and together with the duct fully seated, snap the cartridge locking clips into place.

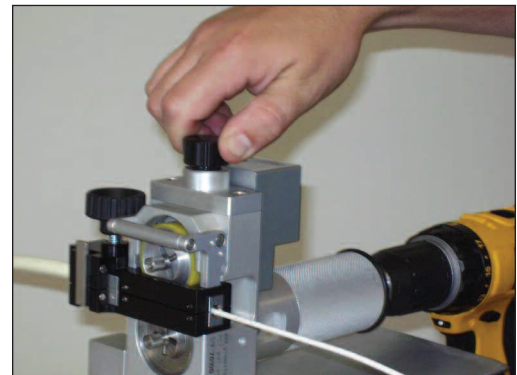


3. Turn the black compression knob clockwise until snug.



4. Place cartridge into the unit being sure it is positioned properly. Pull down the locking bar to secure the cartridge in the receptacle. The tension control knob should be in the counter-clockwise position. The compression knob (on the cartridge) should be on the operator's right when in the installation position. Cables are always installed from the operators left to right.

5. Place the cable into the opposite end of the insert, pushing approximately two (2) feet through the insert and into the microduct. Push the cable slightly and be sure it moves freely into the microduct to ensure that the cable was not pinched when the insert was installed, or that it may be jammed against the cable seal. (It may be necessary to cut cable- end clean and remove any Kevlar strands which could inhibit threading the cable through the cable seal.) Steps 4 and 5 may be reversed if using the operator's stand.



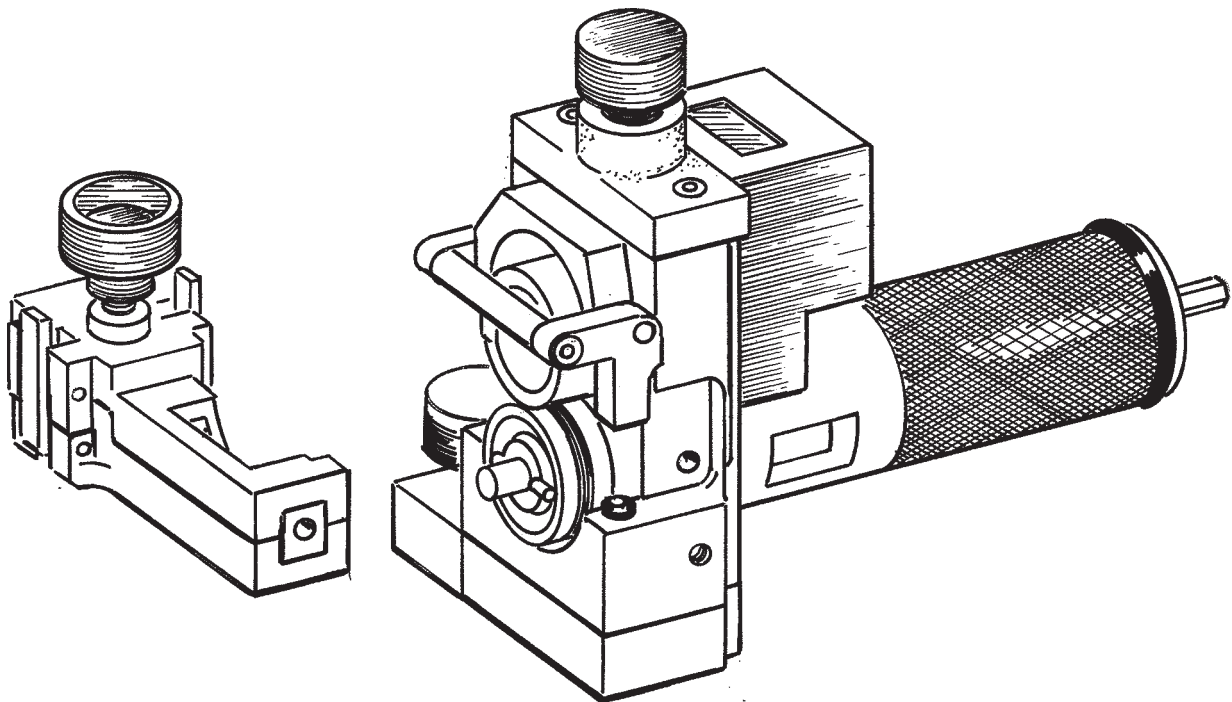
6. With the cable installed through the cartridge and into the duct, turn the tension control knob fully clockwise until snug.



7. Attach air supply hose (from air compressor or nitrogen bottle) to the ULTIMAZ.



8. Re-Set counter to zero by depressing re-set button and holding until display clears.

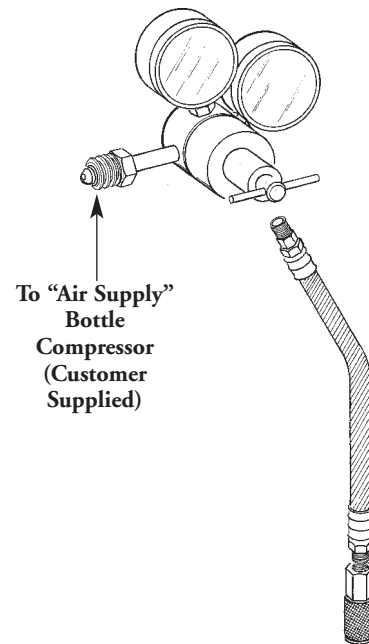


OPERATING INSTRUCTIONS

1. Attach cordless drill to ULTIMAZ drive motor shaft (if not already attached) and tighten drill chuck. If drill is on operator's stand, with ULTIMAZ on the pedestal and the drill in the cradle, adjust to proper vertical and horizontal positions so unit and drill are on the same plane. Be sure that the drill is set in the forward or clockwise rotation setting. If not using a stand, never allow the weight of the drill to be supported by the ULTIMAZ drive shaft only or damage may occur. Support the unit with your free hand or set it on a level surface to evenly distribute drill weight.
2. Set drill to max torque setting. (ULTIMAZ has an integrated torque limiter to keep drill from over driving and/or damaging cables.)
3. Start air compressor and open air output valve, or if using nitrogen open the tank output valve to full flow.
4. For 8.5mm/6mm Microduct – gradually open unit air output valve and increase air pressure to two (2) bar maximum as shown on the ULTIMAZ air pressure gauge and let air begin to flow.
5. For 12.7mm/10mm Microduct – gradually open unit air output valve and increase air pressure to four (4) bar maximum as shown on the ULTIMAZ air pressure gauge and let air begin to flow.
6. Activate cordless drill to desired speed and monitor distance and speed with the counter. Average installation speeds are between 150-300 FPM. It is sometimes necessary to gently hand-assist the fiber cable into the cartridge to initiate forward motion. (Do Not Bend or Over Stress the cable.)
7. When cable exits duct end, take the desired amount of slack, stop drill and turn off air output valve at ULTIMAZ immediately.

AIR SUPPLY POINTERS

- Keep air output valve on the ULTIMAZ open only when installing the cable. Any additional time spent with the valve open prior to or after the installation is wasting air/gas.
- If using nitrogen for checking duct integrity or for pull string removal, use only enough air required for the task so as not to waste air/gas.
- Always monitor the air pressure gauge on nitrogen tank so as to be aware of consumption and depletion rate.
- Be aware of any leaks in the system, i.e. at ULTIMAZ such as cable seals or duct O-ring or at all air fittings between the tank and the unit.



AVERAGE AIR CONSUMPTION WITH NITROGEN TANKS (VARIOUS SIZES:)

Estimated Ultimaz Air Consumption

8.5 mm Duct at 2 bar

Bottle Volume	60CF Bottle	80CF Bottle	120CF Bottle	200CF Bottle
Minutes of Usage	15	20	30	50
# of Drops	20	25	40	65

12.7 mm Duct at 4 bar

Bottle Volume	60CF Bottle	80CF Bottle	120CF Bottle	200CF Bottle
Minutes of Usage	3	4	6	10
# of Drops	4	5	8	12

The above chart is a guideline only as “real world” situations may create various effects on consumption. In order to conserve air be sure ULTIMAZ is not leaking at the cable or duct sealing points, all hose fittings are tight, and do not allow air to blow when not actually installing the cable. It is important to note that faster cable installs (FPM) translate into less air consumption due to the shorter installation time required. It is also important to note that using air for checking duct integrity, airflow, and pull string removal will significantly affect the number of drops installed.

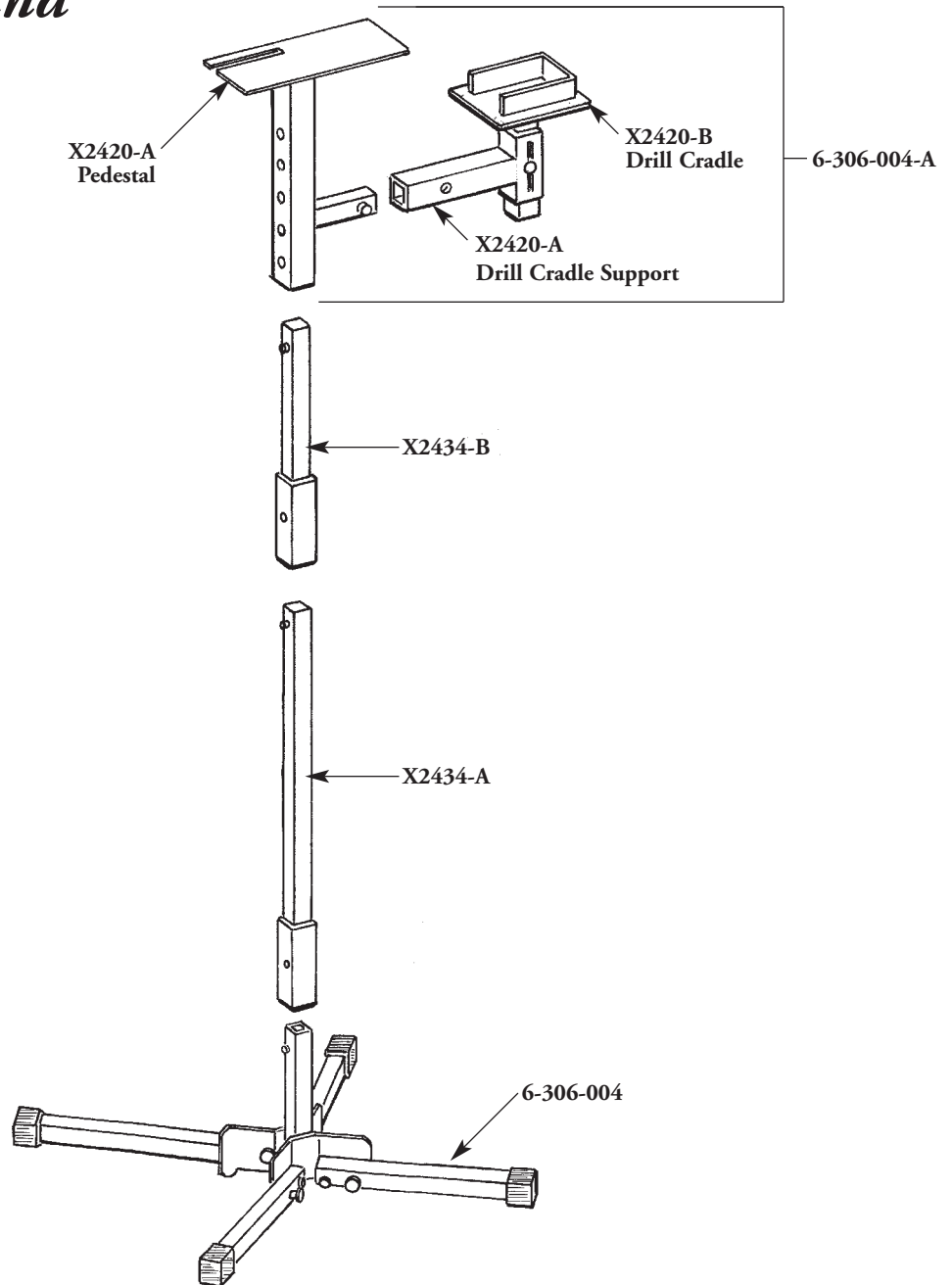
TROUBLESHOOTING

Problem	Probable Cause	Remedy
No Cable Movement	Alignment of the cartridge	Remove cartridge and re-align again
	Drill on reverse	Check drill direction
	Cable not inserted into cable seal	Remove cartridge and insert cable completely through cable seal
	No air flow	Turn on air at source or unit
Slow Cable Movement	Cable seal too tight	Check to make sure the right cable seal is being used and inserted
	Cable diameter out of spec	Measure the diameter of cable
	Massive air leak	Check to see if you have blown off a coupler or the O-rings on the unit have fallen off
	Low on air/nitrogen	Check to see if the air/nitrogen supply is running low
	Drill battery dying or drill speed too slow	Charge battery or replace with fresh battery
Air Leak at the Unit	Duct O-ring not installed	Remove and take apart the cartridge to see if the duct O-ring was installed
	Cable seal not installed	Remove and take apart the cartridge to see if the cable seal is installed
	O-ring on unit has fallen off	Remove cartridge and check for the O-rings
Cable Stops	Coupler not connected properly	Check footage to see if a coupler is located at that distance and shake the duct or reinstall coupler
	Kink in the MicroDuct	Check footage, round out or cut out kink if possible and install coupler
	Duct exit is obstructed	Check the end of the MicroDuct to see if the duct is aimed towards the cabinet, wall, etc.



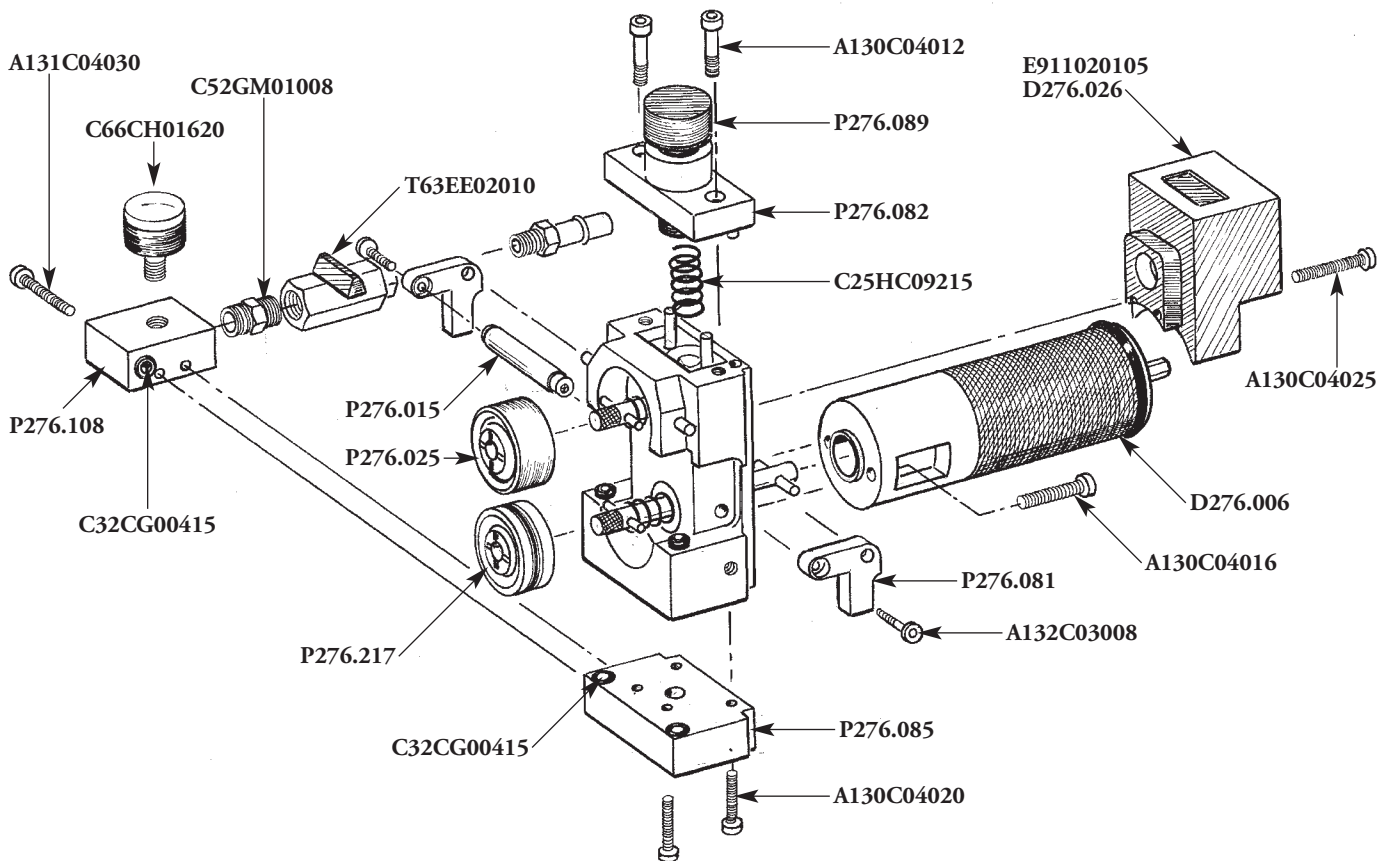
TROUBLESHOOTING

Operator's Stand



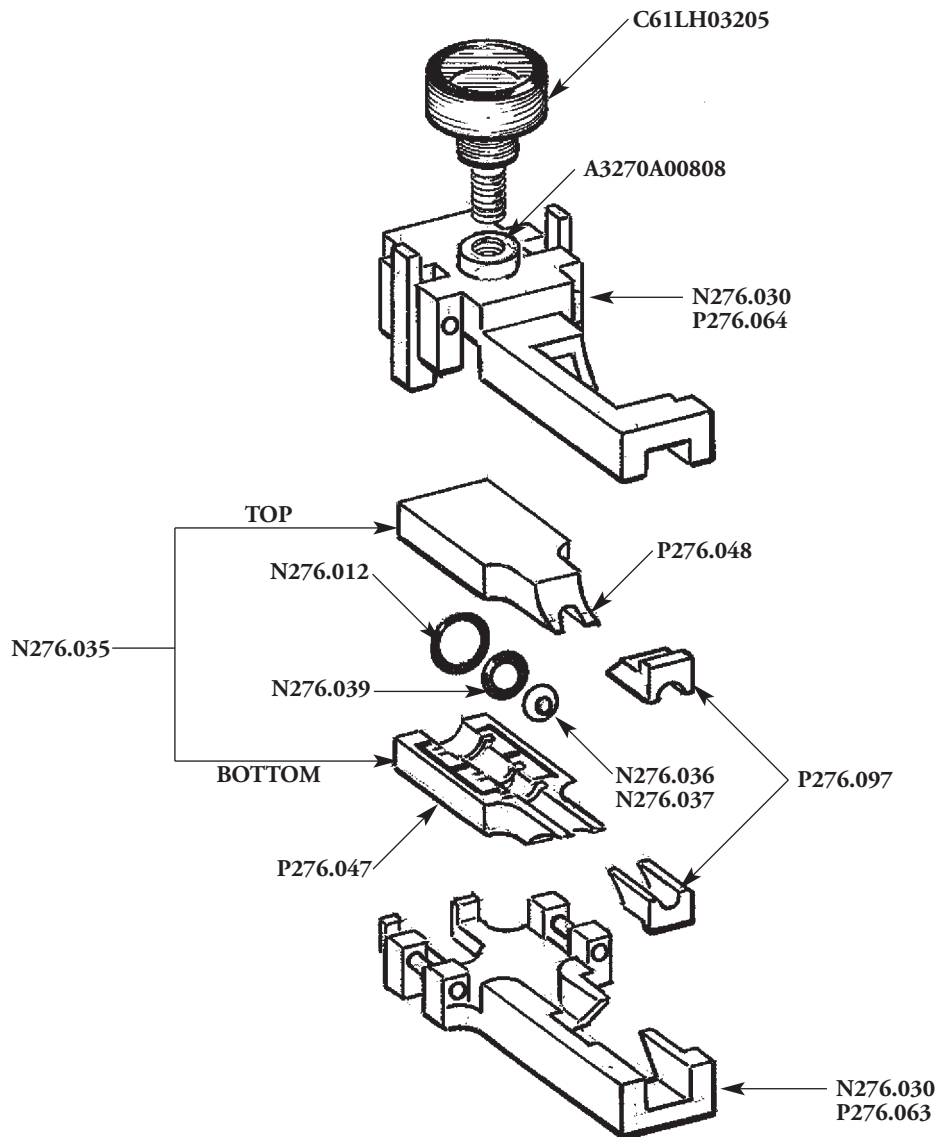
Part #	Description	Qty.
6-306-004	Base	1
6-306-004-A	Mounting Stand	1
X2434-A	Main Tube	1
X2434-B	Extension Tube	1
MOS-10-ULT	Operator Stand, complete	1

Tension and Drive Assembly



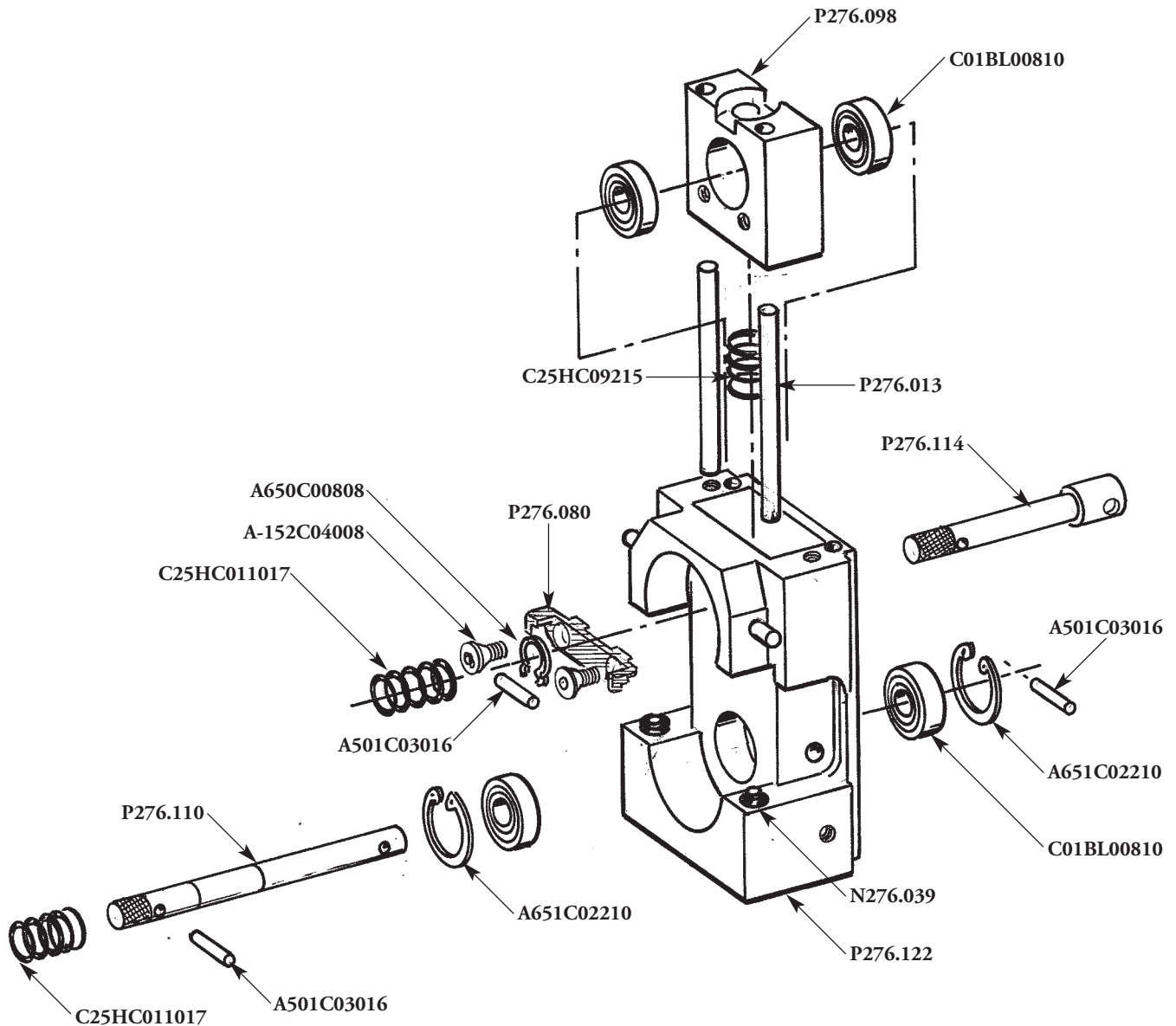
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Cable and Duct Cartridge Assembly



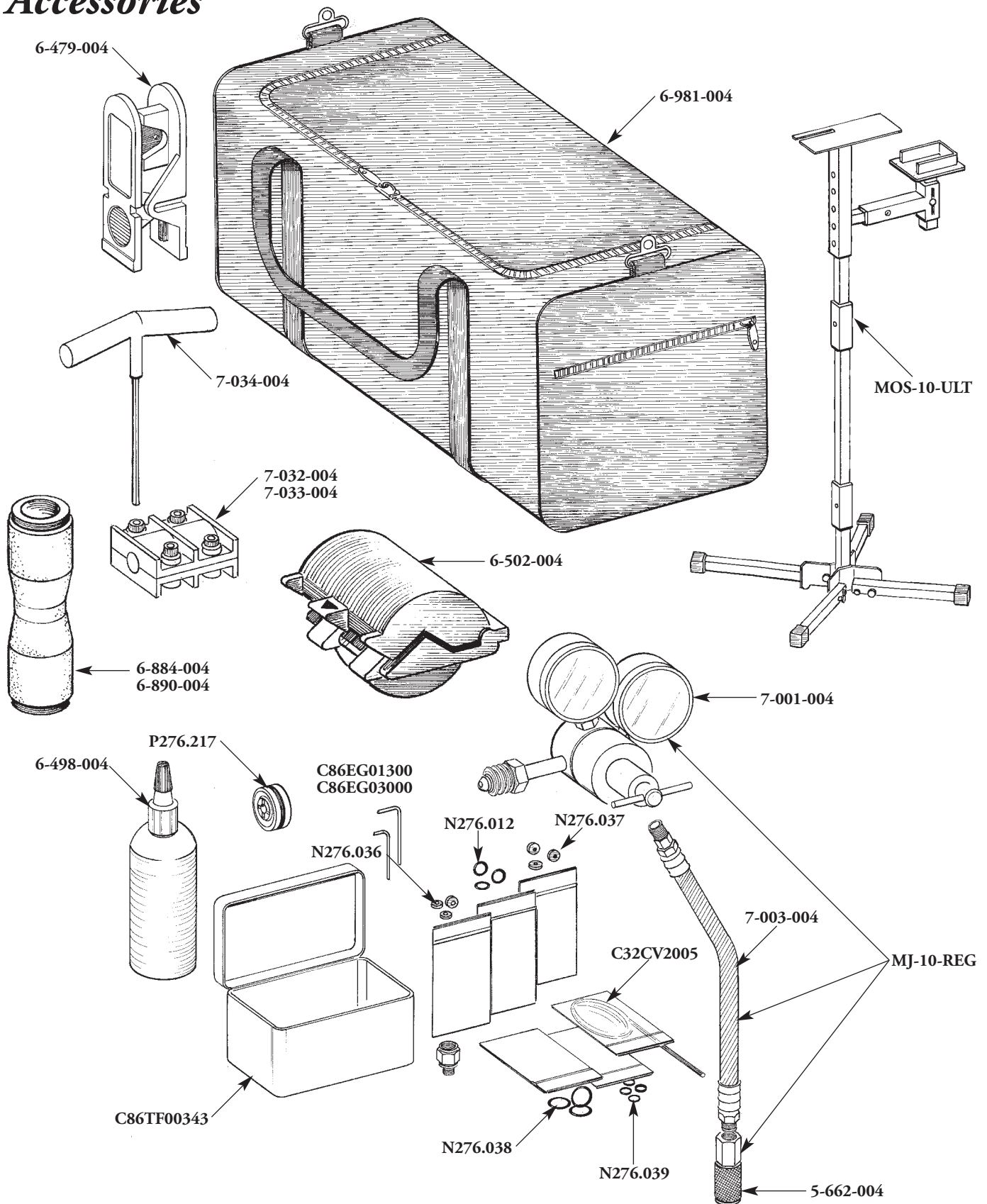
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Tension and Drive Axle Assembly



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Accessories



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