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DynaPrep MDSF

User's Manual



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Revision History:

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**EU DECLARATION OF CONFORMITY
WITH
COUNCIL DIRECTIVE 2006/42/EC**

Issue Details:	Date: 1/1/2016	Place: E.H. Wachs, Lincolnshire, IL USA
Directives:	Machinery Safety Directive 2006/42/EC	
Conforming Machinery:	DynaPrep MDSF Split Frame Machine	
Model Number:	69-0000-XX, 69-5XXX-XX	
Serial Number:		
Manufacturer:	E.H. Wachs Company 600 Knightsbridge Parkway Lincolnshire IL 60069 USA	
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Harmonised Standards & Other Technical Standards/Specifications Applied or Referenced:	EN ISO 12100-1:2003 + A1:2009, EN ISO 12100-2:2003 + A1:2009, EN ISO 13857:2008, EN 982:1996 + A1:2008 (E), EN 983:1996 + A1:2008 (E), EN 13732-1:2006, EN ISO 14121-1:2007, EN 60204-1:2006 (for electrical machines), EN ISO 13850:2008 (for pneumatic machines)	
Provisions with which Conformity is Declared:	Essential Health and Safety Requirements of Annex 1 of the Machinery Directive	
We hereby certify that the machinery described above conforms to the provisions of Council Directive 2006/42/EC on the approximation of the laws of the Member States relating to the safety of machinery.		
Signed:		
Signatory:	Pete Mullally Quality Manager E.H. Wachs	

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Chapter 1

About this Manual

PURPOSE OF THIS MANUAL

This manual explains how to operate the DynaPrep MDSF split frame machine. It includes safety information for safely operating the machine, preventive maintenance guidelines, and troubleshooting procedures.

Before operating the DynaPrep, you should read through this manual and become familiar with all instructions.

A separate maintenance manual is provided. The *DynaPrep MSDF Maintenance Manual* includes service and repair information, and parts drawings with ordering information.

HOW TO USE THE MANUAL

This manual is organized into the following chapters:

- **Chapter 2, Safety**, provides important information and instructions for safe use of the DynaPrep machine. **Read this chapter carefully before operating the machine.**
- **Chapter 3, DynaPrep MDSF Features and Accessories**, describes the operating features of the machine and lists all models, accessories, and kits available. **Read this chapter carefully to become familiar with the operating features of the DynaPrep MDSF and its accessories.**
- **Chapter 4, Set-Up Instructions**, describes how to configure the DynaPrep MSDF for the size of the pipe, mount it for operation, and install the drive motor. It includes operating dimension drawings for each DynaPrep model. The following chapters describe mounting and using the different types of tool slides for different cutting applications.
- **Chapter 5, Operating with Standard Slides**, describes how to perform parting and beveling operations using standard tool slides (1.5" stroke, 2.5" stroke, and 5.5" stroke). It includes

instructions for configuring the slides, mounting them on the DynaPrep MDSF, and performing the cutting operation.

- **Chapter 6, Operating with O.D. Tracking Slides**, describes how to perform parting and beveling operations using the spring-loaded O.D. tracking tool slides. These slides allow machining of out-of-round pipe by tracking on the outside surface of the pipe. The chapter includes instructions for configuring the slides, mounting them on the DynaPrep MDSF, and performing the cutting operation.
- **Chapter 7, Operating with a Counterbore Slide**, describes how to perform the counterbore operation using the standard counterbore or deep counterbore slides. It includes instructions for configuring the slide, mounting it on the DynaPrep MDSF, and performing the cutting operation.
- **Chapter 8, Operating with the Bridge Slide**, describes how to perform counterboring and beveling operations using a bridge slide. It includes instructions for configuring the slide with the DynaPrep MDSF. A separate manual, the *Bridge Slide Accessory for Low Clearance Split Frame*, describes how to operate the bridge slide.
- **Chapter 9, Preventive Maintenance**, describes how to lubricate the components of the DynaPrep MDSF and its accessories, and perform routine adjustments. For information on repair or replacing worn and damaged parts, see the *DynaPrep MDSF Maintenance Manual*.

SYMBOLS AND WARNINGS

The following symbols are used throughout this manual to indicate special notes and warnings. Make sure you understand what each symbol means, and follow all instructions for cautions and warnings.



WARNING

A **WARNING** alert with the safety alert symbol indicates a potentially hazardous situation that **could** result in **serious injury or death**.



CAUTION

A **CAUTION** alert with the safety alert symbol indicates a potentially hazardous situation that **could** result in **minor or moderate injury**.



ATTENTION

This is the **equipment damage alert symbol**. It is used to alert you to **potential equipment damage situations**. Obey all messages that follow this symbol to avoid damaging the equipment or workpiece on which it is operating.



NOTE

This symbol indicates a user note. **Notes** provide additional information to supplement the instructions, or tips for easier operation.

Chapter 2

Safety

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E.H. Wachs takes great pride in designing and manufacturing safe, high-quality products. We make user safety a top priority in the design of all our products.

Read this chapter carefully before operating your E.H. Wachs equipment. It contains important safety instructions and recommendations.

SAFETY ALERTS IN THIS MANUAL

The following alerts are used throughout this manual to indicate operator safety hazards. In all cases, these alerts include a notice describing the hazard and the means to avoid or reduce risk. Carefully read all safety alerts.



WARNING

A **WARNING** alert with the safety alert symbol indicates a potentially hazardous situation that **could** result in **serious injury or death**.



CAUTION

A **CAUTION** alert with the safety alert symbol indicates a potentially hazardous situation that **could** result in **minor or moderate injury**.

SAFE OPERATING GUIDELINES

Follow these guidelines for safe operation of all E.H. Wachs equipment.

- **READ THE OPERATING MANUAL.** Make sure you understand all setup and operating instructions before you begin. Keep this manual with the machine.

- **INSPECT MACHINE AND ACCESSORIES BEFORE USE.** Before starting the machine, look for loose bolts or nuts, leaking lubricant, rusted components, and any other physical conditions that may affect operation. Properly maintaining the machine can greatly decrease the chances for injury.
- **ALWAYS READ STICKERS AND LABELS.** Make sure all labels and stickers are in place, clearly legible, and in good condition. Refer to “Safety Labels” later in this chapter for label locations on the machine. Replace any damaged or missing safety labels; see the inside back cover of this manual or the *DynaPrep MDSF Maintenance Manual* for ordering information.
- **KEEP CLEAR OF MOVING PARTS.** Keep hands, arms, and fingers clear of all rotating or moving parts. Always turn the machine off and disconnect the power source before doing any adjustments or service.
- **SECURE LOOSE CLOTHING AND JEWELRY.** Secure or remove loose-fitting clothing and jewelry, and securely bind long hair, to prevent them from getting caught in moving parts of the machine.
- **FOLLOW SAFE PROCEDURES FOR HANDLING LUBRICANTS.** Refer to the manufacturer’s instructions and the Material Safety Data Sheets.

Safe Operating Environment

- Do not use this equipment in a potentially explosive atmosphere. Fire or explosion could result, with the risk of serious injury or death.
- Provide adequate lighting to use the equipment, in accordance with worksite and local regulations.
- **KEEP WORK AREA CLEAR.** Keep all clutter and nonessential materials out of the work area. Only people directly involved with the work being performed should have access to the area.

Operating and Maintenance Safety

- This equipment is to be operated and maintained only by qualified, trained personnel.
- Make sure the equipment is stable when attached to the workpiece for the operation. Ensuring stability of the installed tool is the responsibility of the operator.
- Make sure the workpiece is supported adequately for installation of the equipment. This includes supporting any workpiece “fall-off” section when severing the workpiece. Ensuring support of the workpiece is the responsibility of the operator.
- Tooling on any cutting equipment—including lathe tools, saw blades, milling tools, etc.—may get very hot. Do not touch tooling until you have made sure it is cool enough to handle.
- Wear gloves when removing or cleaning up chips and cutting debris. Chips can be very sharp and cause cuts.
- Before performing any service on the equipment, disconnect the power source. Follow all lock-out/tag-out procedures required at the worksite.

Hydraulic Powered Equipment

- Hydraulic components such as hoses, motors, and manifolds will get hot during operation and may cause burns. Do not touch hydraulic components, except for operator controls, during or after operating the machine.
- **Hydraulic injection injury**—A pinhole in a hydraulic hose or fitting can eject fluid with enough force to pierce skin. Check hoses and fittings regularly for leaks. **Do not use bare hands to check for leaks while the system is pressurized.** If you suspect a leak, move a piece of paper or cardboard at least 6 inches (15 cm) over the suspicious area and watch for fluid spraying on the surface.



WARNING

Injection of hydraulic fluid through the skin is a serious injury that can result in infection, tissue damage, and possible loss of limb. **Seek medical treatment immediately.** First aid is not sufficient treatment for injection injury.

Pneumatic Powered Equipment

- Air motors may get hot during operation and may cause burns. Do not touch the air motor, except for operator controls, during or after operating the machine.
- Before disconnecting the air line from the equipment, always turn off air at the source and bleed all residual air pressure at the air motor.

Loss or Shut-Off of Power Supply

- If the power source to the equipment is lost, disconnect power from the equipment and lock out the power supply immediately to prevent accidental restarting of the machine.
- **ELECTRIC POWERED EQUIPMENT**—If the electric drive shuts off because of its built-in thermal protection, disconnect the motor from the power source immediately.
- For all power sources, follow all lock-out/tag-out procedures required at the worksite when disconnecting or servicing the equipment.

Protective Equipment Requirements

Protective Clothing

Wear safety shoes when operating or servicing the equipment. Serious injury could result from dropping the machine or its components.

Do not wear gloves while operating the machine. Gloves can become entangled in moving parts, resulting in serious injury. Gloves may be worn when setting up the machine or cleaning up after the operation, but take them off when operating the machine.



NOTE

Gloves should be worn when cleaning up chips and other cutting debris. Chips can be very sharp and can cause serious cuts. **Do not wear gloves when the machine is operating.**

Eye Protection

Always wear impact-resistant eye protection while operating or working near this equipment.

For additional information on eye and face protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.133., Eye and Face Protection and American National Standards Institute, ANSI Z87.1, Occupational and Educational Eye and Face Protection.

Hearing Protection

This equipment can produce noise levels above 80 dB. Hearing protection is required when operating the equipment. The operation of other tools and equipment in the area, reflective surfaces, process noises, and resonant structures can increase the noise level in the area.

For additional information on hearing protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.95, Occupational Noise Exposure and ANSI S12.6 Hearing Protectors.

SAFE OPERATION OF THE DYNAPREP MDSF

Intended Uses

The DynaPrep MDSF is designed to O.D. mount on in-line or open-ended pipe, and perform cut-off and weld prep (beveling, counterboring, and J-prep) operations. It uses cold-cutting lathe techniques, with a variety of accessories and tooling for different cutting applications.

Make sure to follow all safety guidelines and procedures required for machining operations at the work site, including personal protective equipment (PPE). Do not use the DynaPrep MDSF in a manner that violates these guidelines.

Proper Use of the DynaPrep MDSF

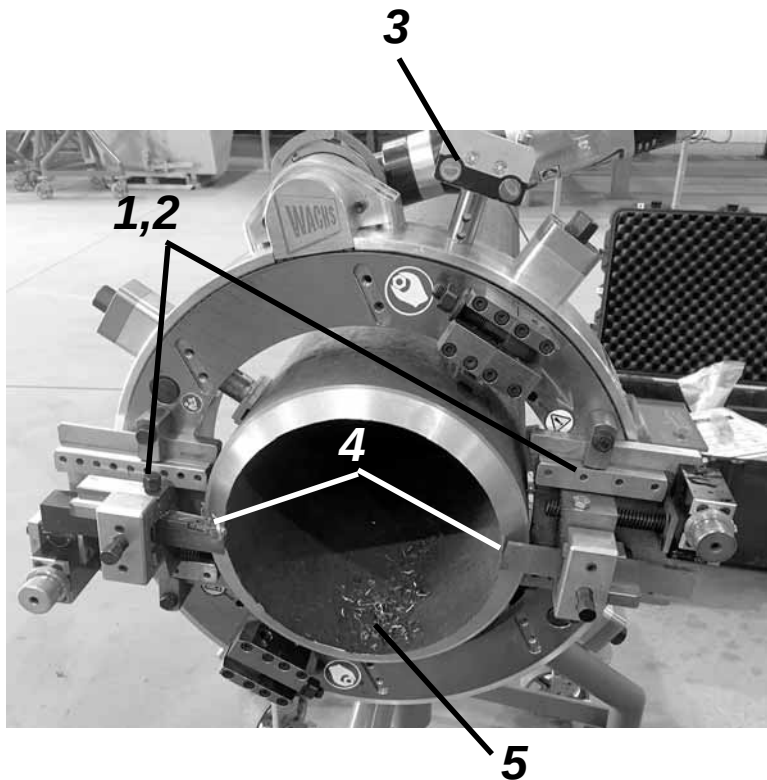
- The DynaPrep MDSF should only be used by trained, qualified operators.
- The workpiece must be within the operating capacity of the DynaPrep MDSF model you are using. See operating envelope information and drawings in Chapter 4, “Set-Up Instructions”.
- Make sure the operating environment allows you to mount the machine securely and squarely on the workpiece.
- Make sure there is adequate clearance around the DynaPrep MDSF and workpiece to operate the machine controls as described in the operating instructions (Chapter 5).
- Mount the DynaPrep MDSF with the pinion housing positioned for convenient mounting and operation of the drive motor.
- Use the DynaPrep MDSF only on empty, depressurized pipe.

Misuse

- Do not attempt to mount or operate the DynaPrep MDSF on non-cylindrical workpieces.
- Do not attempt to mount or operate the DynaPrep MDSF on any workpiece to which it cannot be securely mounted.
- Do not attempt to mount or operate the DynaPrep MDSF on any workpiece that is not stable enough to hold the machine.
- Do not mount the DynaPrep MDSF on the “fall-off” side of the cut line, unless you adequately rig and support the machine and workpiece.
- Do not disable any safety feature of the DynaPrep MDSF or remove any safety labeling. Replace worn or damaged safety labels immediately. (See “Safety Labels” later in this chapter.)

Potential Hazards

The following figures illustrate potential hazards of operating the DynaPrep MDSF. Refer to the description of each hazard for guidelines on safe operation.



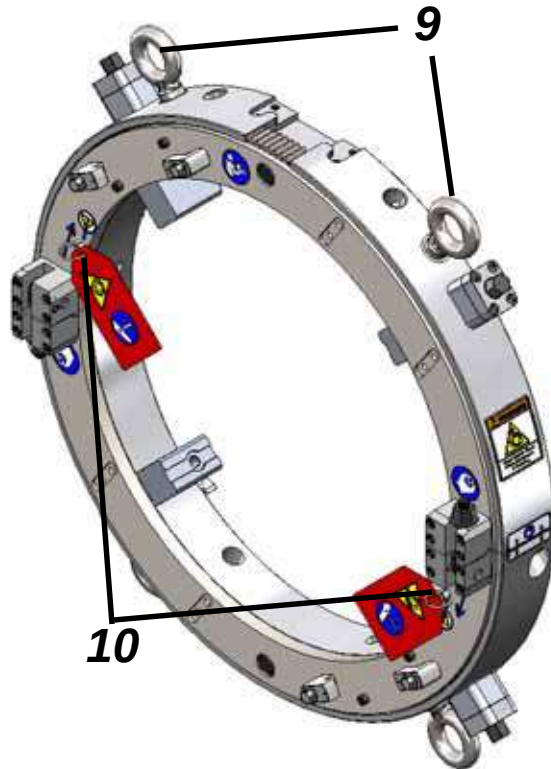
1. Rotating ring—Keep clear of the rotating ring and tool slides when operating the DynaPrep MDSF. Contact with moving parts can cause serious injury.

2. Entanglement hazard for gloves or clothing—Do not wear gloves or loose-fitting clothing when operating the DynaPrep MDSF. They can become entangled with moving parts, resulting in serious injury.

3. Starwheel/trip pinch point—Operate the trips using the trip knobs only. Do not touch any part of the trip assembly, other than the knobs, when operating the DynaPrep MDSF or when rotating it manually for any reason.

4. Sharp cutting tools—Cutting tools used with the DynaPrep MDSF can be very sharp. Be careful when handling the tools, and stay clear of them when the machine is operating.

5. Chips—The metal debris from the cutting process can be very sharp and very hot. Use care in cleaning debris from the machine and cleaning up the work area. Stop the machine before clearing chips. Use appropriate gloves when handling chips.



6. Hot surfaces—Air motors and hydraulic components such as hoses, manifolds, and motors can become very hot during operation. Make sure these components are not hot before touching them.

7. Air motor connection—A pressurized air line can cause serious injury if it comes loose. Make sure the air line is secured to the equipment with a pin or other appropriate fastener.

8. Fall-off workpiece—When you are severing the workpiece, make sure the fall-off section is supported or that a catch device is in place. A support chain and scaffolding are shown in the picture.

9. Lifting the machine—Use care when lifting the DynaPrep MDSF and its components to avoid injury. Machines and components heavier than 40 lb (18 kg) should be lifted by two people or with a lifting device. Larger DynaPrep MDSF models are provided with lifting eyes for rigging and lifting. See “Machine Weights” later in this chapter for weights of all DynaPrep MDSF models and accessories.

10. Splitting the ring—Alignment pins are provided to keep the rotating and stationary rings together when splitting the ring. Make sure you insert the pins before separating the ring halves. If the pins are not inserted, the rotating ring could fall out of the stationary ring, causing personal injury and/or damage to the machine.

DynaPrep MDSF Safety Features

The design of the DynaPrep MDSF incorporates the following features for safe operation.

Enclosed Bearing and Drive Gear System

The DynaPrep MDSF bearings and drive gears are enclosed inside the machine to prevent operator contact with them while the machine is running.

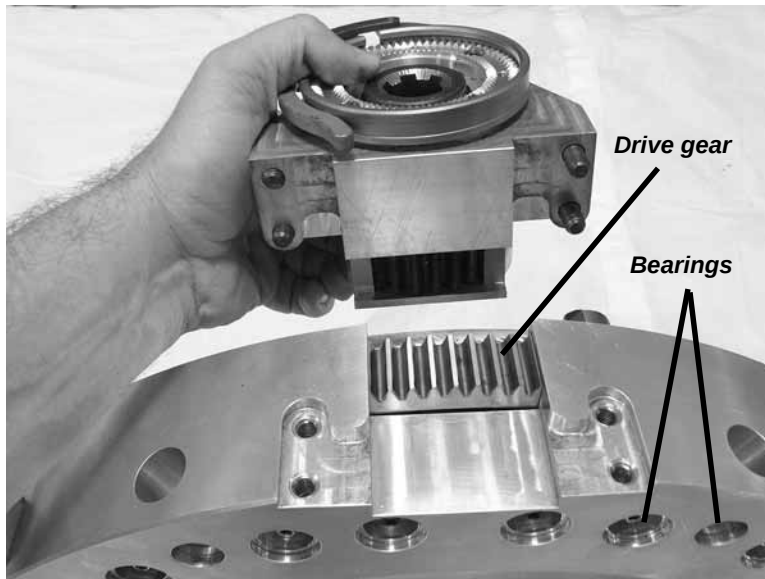


Figure 2-1. The bearings and drive gear are enclosed in the DynaPrep MDSF frame. The pinion housing covers the drive gear when installed.

Stop-on-Release Power Control

All drives for the DynaPrep MDSF (pneumatic, electric, and hydraulic) require the operator to hold the power control on to operate the machine. When the operator releases the power control, the machine stops immediately.



WARNING

Do not disable or override the stop-on-release feature. Letting the machine run when you are not holding the power control could result in serious injury.



Figure 2-2. Hold the air motor trigger to operate the DynaPrep MDSF (left). When you release the trigger (right), the air motor shuts off.

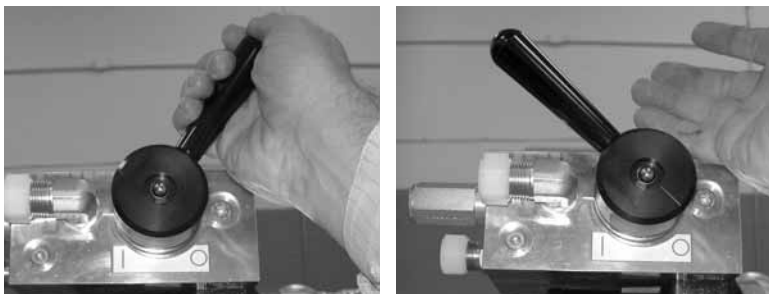


Figure 2-3. Hold the hydraulic lever to operate the DynaPrep MDSF (left). When you release the lever (right), the hydraulic motor shuts off.

Rear-Mounted Trip Knobs

The DynaPrep MDSF trip design allows the operator to engage and disengage the trip from behind the machine, without reaching into the operating space of the rotating ring and slides. Push and pull the trip pins to control engagement of the trip.

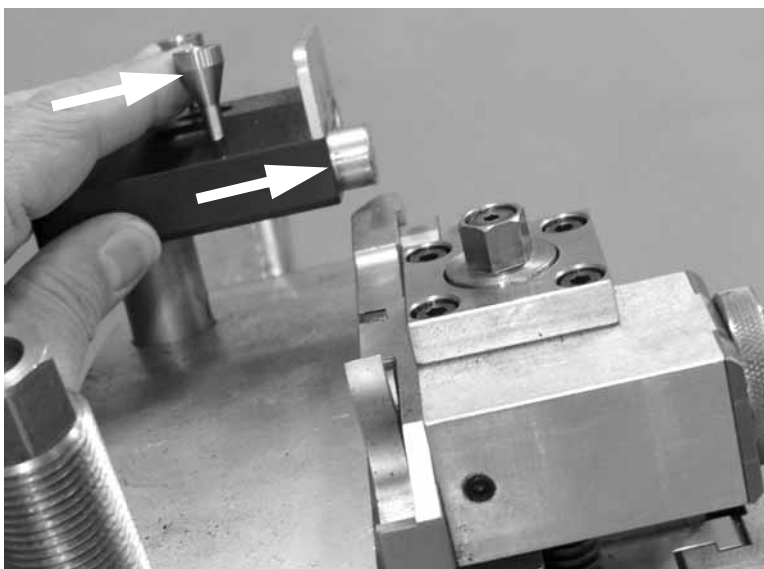


Figure 2-4. Press the trip knob forward (toward the slide) to engage the trip pin.

Remote Operation Option

Remotely controlled operation is available as an option for all DynaPrep MDSF drive types.

- For pneumatic drives, order the remote control panel (part no. 60-420-00). The control panel is provided with its own operating instructions.
- A control pendant is provided with electric drives to allow remote operation.
- For hydraulic drives, contact E.H. Wachs customer service to discuss your operating environment and requirements.
- A pneumatic trip system (69-4741-00) allows the operator to enable and disable the trips remotely.

Guidelines for Safe Setup, Operation, and Service

Pre-Operation Checklist

Every time you use the DynaPrep MDSF, perform the following checks to make sure it is in good operating condition:

- Check that all safety components are operating properly.
- Inspect it for damage or wear that could affect operation and safe use of the machine. Repair any defective component before using the machine.
- Make sure the machine is clean and properly lubricated.
- Make sure that tooling is sharp and in good condition. Poor quality tooling can cause difficult cutting and the possibility of machine malfunction and/or injury.
- Check power connections (pneumatic, hydraulic, or electric) to make sure they are in good condition.

Operating Safety

- Stop the drive motion to clear chips or make any machine adjustments.
- For parting (cut-off) operations, use a catch device to prevent the cut-off piece of the pipe from falling.
- Keep air and hydraulic hoses and electrical cords away from moving parts while operating the machine.

Service Checklist

- Disconnect power from the machine during service. See instructions in the following section.
- Remove accessories such as drive assemblies and tool slides unless they are part of the service procedure.

Disconnecting Power

The following photos show the means of disconnecting power for the DynaPrep MDSF. Follow all lock-out/tag-out procedures at your work site.



Before disconnecting the air line, always turn off air at the source and bleed all residual air pressure at the air motor. Disconnecting the air line while under pressure could result in serious injury.

- **PNEUMATIC POWER**—To disconnect power from the air motor, remove the air line from the air motor coupling.



Figure 2-5. Disconnect pneumatic power by removing the air line from the pneumatic drive.



WARNING

Hydraulic components such as hoses, motors, and manifolds will get hot during operation and may cause burns. Use appropriate gloves or wait until the components cool before touching them.

- **HYDRAULIC POWER**—To disconnect power from the hydraulic motor, remove the hydraulic hoses from the fittings on the manifold.

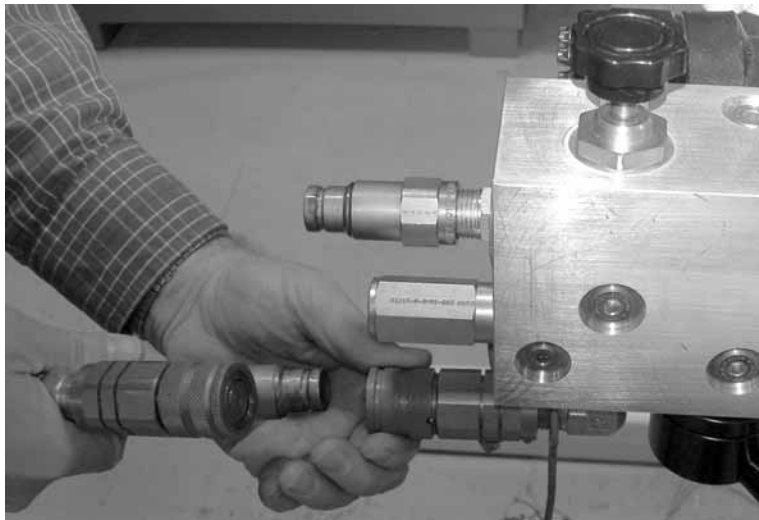


Figure 2-6. Disconnect hydraulic power by removing the hydraulic hoses from the fittings on the manifold.

Safe Lifting and Handling

- Machines or assemblies over 40 lb (18 kg) must be lifted by two people or a lifting device. See the machine weight tables in the following section.

- It is the responsibility of the end user to determine whether a machine or assembly can be lifted by two or more people. A lifting device is recommended for machines or assemblies that cannot be handled easily by two people.
- DynaPrep MDSF models 1218 and larger are equipped with eye bolts in the stationary ring for lifting.
- Do not rig or lift the machine while power is attached. Whenever possible, remove all accessories (slides, trips, drive assembly, etc.) while lifting and handling the machine.
- Lift the DynaPrep MDSF only at approved lift points, as illustrated in the following figure.

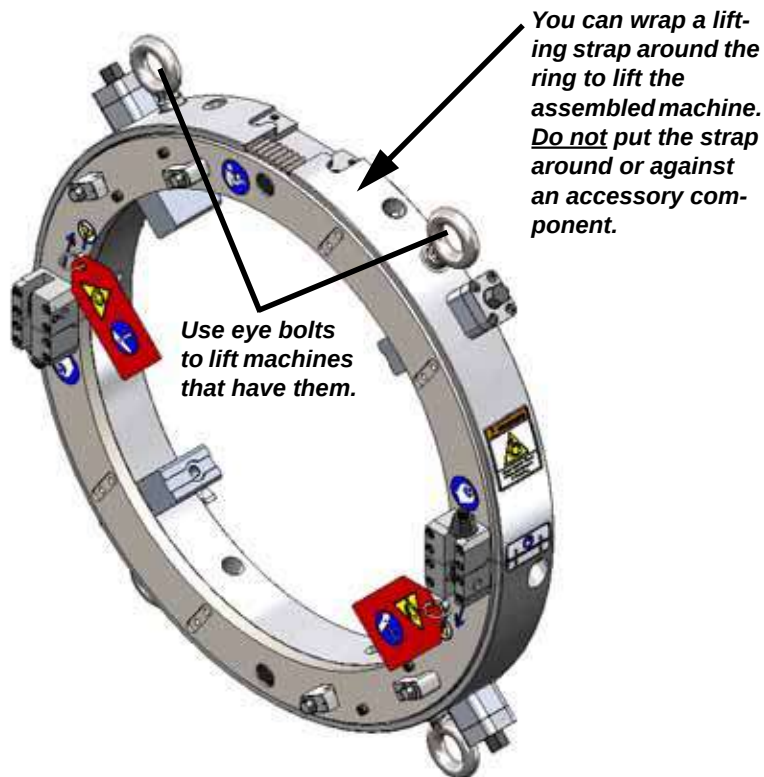


Figure 2-7. MDSF models 1218 and larger have eye bolts for lifting. There are 2 eye bolts on each half of the ring.



WARNING

When lifting and handling half of a split machine, **always** make sure the alignment pins are inserted. The rotating ring can fall out of the stationary ring if the pin is not in place.

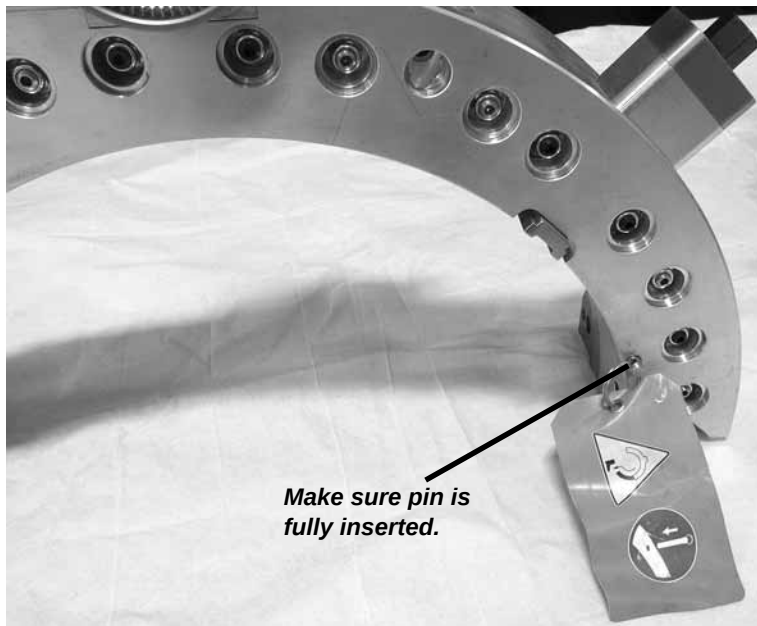


Figure 2-8. Always have the alignment pins inserted when lifting or handling a split machine.

Machine Weights

Table 1 lists the weights for each DynaPrep MDSF model. Weights are included for the entire machine as well as each separable assembly. The following tables list the weights for slides, drives, and other accessories. To determine lifting weight, add weights of installed components to the machine assembly.

Table 1: DynaPrep MDSF Machine Weights

Model (Part No.)	Full Machine Weight*	Half Ring Weight**
MDSF 206 (69-0000-06)	54.5 lb (24.7 kg)	28 lb (12.7 kg)
MDSF 408 (69-0000-08)	57.5 lb (26.1 kg)	31 lb (14.1 kg)
MDSF 610 (69-0000-10)	70 lb (31.8 kg)	37 lb (16.8 kg)
MDSF 612 (69-0000-12)	77 lb (34.9 kg)	41 lb (18.6 kg)
MDSF 814 (69-0000-14)	81 lb (36.7 kg)	44 lb (20 kg)
MDSF 1016 (69-0000-16)	88 lb (40 kg)	47 lb (21.3 kg)
MDSF 1218 (69-0000-18)	97 lb (44 kg)	52 lb (23.6 kg)
MDSF 1420 (69-0000-20)	103 lb (46.7 kg)	54 lb (24.5 kg)
MDSF 1824 (69-0000-24)	116 lb (52.8 kg)	60.5 lb (27.4 kg)
MDSF 2228 (69-0000-28)	174.5 lb (79.2 kg)	92 lb (41.7 kg)
MDSF 2632 (69-0000-32)	191.5 lb (86.9 kg)	101 lb (45.8 kg)

Table 1: DynaPrep MDSF Machine Weights

Model (Part No.)	Full Machine Weight*	Half Ring Weight**
MDSF 3036 (69-0000-36)	218 lb (98.9 kg)	115 lb (52.2 kg)
MDSF 3642 (69-0000-42)	246 lb (111.6 kg)	127 lb (57.6 kg)
MDSF 4248 (69-0000-48)	271 lb (122.9 kg)	139.5 lb (63.3 kg)
MDSF 4854 (69-0000-54)	344 lb (156 kg)	174 lb (78.9 kg)
MDSF 5460 (69-0000-60)	375 lb (170.1 kg)	190 lb (86.2 kg)

* With standard pinion housing; no slides or drive installed. Add 5.4 lb (2.5 kg) for front drive pinion.

** Rounded to nearest lb/kg. Sum may not add exactly to Full Machine Weight.

Table 2: DynaPrep MDSF Slide Weights

Slide	Part No.	Weight	Application
Standard, 1.5" stroke	69-5215-03/06	9.2 lb (4.2 kg)	Use 2 slides for cutting operation
Standard, 2.5" stroke	69-5225-03/06	11 lb (5 kg)	
Standard, 5.5" stroke	69-5255-03/06	13.4 lb (6.1 kg)	
Standard trip assembly	69-4740-00	1.6 lb (0.7 kg)	Use with standard slides; can use multiple trip assemblies
O.D. tracking slide	69-4604-00	28 lb (13 kg)	Use 2 slides for cutting operation
O.D. tracking slide trip assembly	69-4744-00	5.2 lb (2.4 kg)	Use with O.D. tracking slides
Short counterbore	69-4605-00	12.2 lb (5.5 kg)	Manual feed for I.D. counterbore
Deep counterbore	69-4606-00	13.8 lb (6.3 kg)	Manual feed for I.D. counterbore

Table 3: Drive Component Weights

Component	Part Number	Weight
1.5 HP right angle pneumatic	69-4352-00	8.6 lb (3.9 kg)
2.5 HP reversible pneumatic	60-4010-01	14 lb (6 kg)
3 HP right angle pneumatic	69-4351-00 69-4353-00	14.0 lb (6.4 kg)
4 HP straight pneumatic	69-4355-00 69-4356-00	18 lb (8 kg)
3 HP reversible right angle pneumatic	69-4351-00 69-4353-00	14.0 lb (6.4 kg)

Table 3: Drive Component Weights

Component	Part Number	Weight
EPD Electric Power Drive	69-4357-01 69-4357-03	20 lb (9 kg) Drive motor only
Hydraulic drive	69-4358-00	25 lb (11.5 kg)
Right angle adapter head	69-4359-00	8.2 lb (3.7 kg)

Safety Labels

The following safety labels are provided on the DynaPrep MDSF. If any of these labels is damaged or missing, replace it immediately. See Chapter 10 for ordering information.

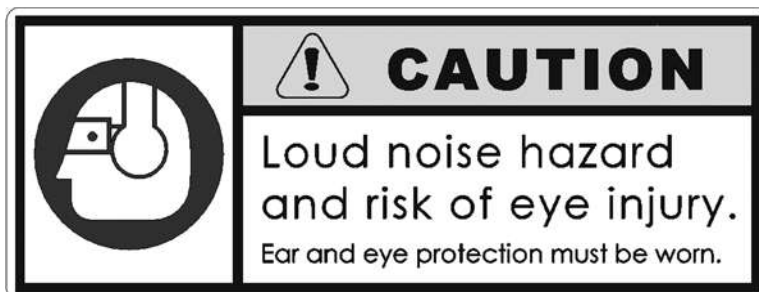


Figure 2-9. The ear and eye protection label is attached to the drive motor. Always wear ear and eye protection when operating the equipment. (Part no. 90-401-03.)



Figure 2-10. The air pressure label is attached to the air drive of pneumatic MDSF models. Do not operate the equipment with greater than 90 psi (6.2 bar) air pressure. (Part no. 90-401-02.)

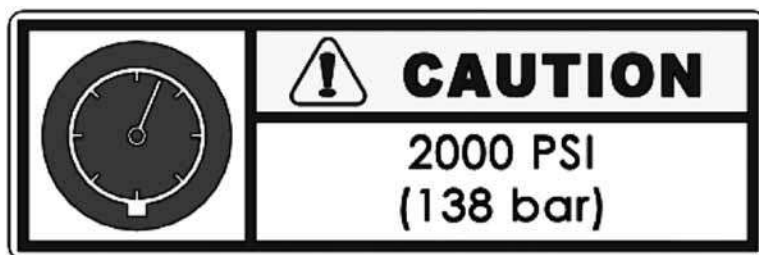


Figure 2-11. The hydraulic pressure label is attached to the hydraulic drive. Do not operate the equipment with greater than 2000 psi (138 bar) hydraulic pressure. (Part no. 90-402-01.)



Figure 2-12. The hot surface label is attached to the drive motor (pneumatic or hydraulic). Drive components may become hot enough to cause burns. Make sure they are not hot before touching them. (Part no. 90-403-00.)

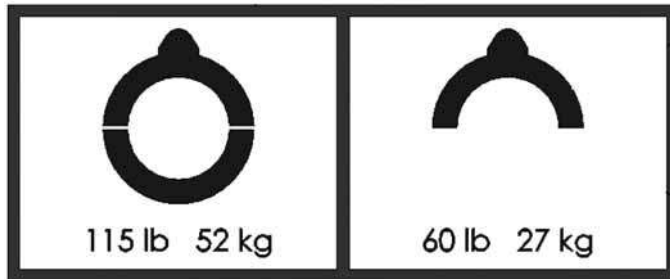


Figure 2-13. Weight labels for the MDSF are attached to the pinion housing. Weights and part no. vary according to model. (Part no. 69-0134-XX.)



Figure 2-14. The “Keep Hands Clear” label is attached to the stationary ring of the MDSF. Stay clear of moving parts when the machine is operating. (Part no. 60-363-00.)

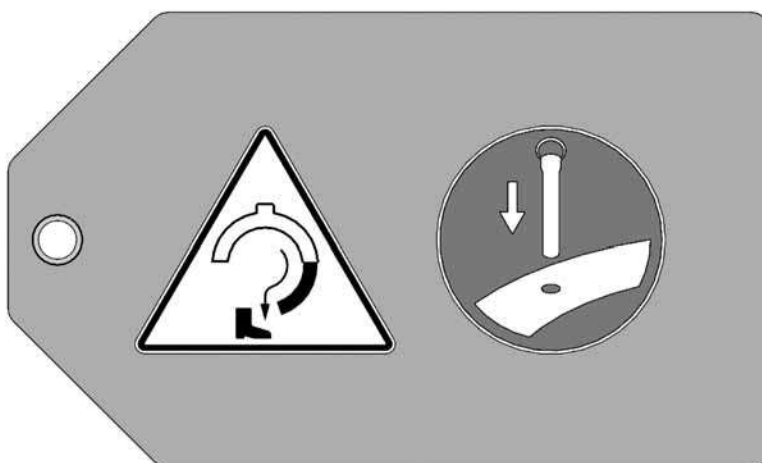


Figure 2-15. The alignment pin tag is attached to the ring on the alignment pin. Make sure to insert the pins before splitting the machine. (Part no. 60-1274-00.)



Figure 2-16. The alignment pin location label is attached to indicate the alignment pin holes. Two labels are on the MDSF, one for each pin location. (Part no. 60-1275-00.)



Figure 2-17. The Read Manual label is attached to the rotating ring of the MDSF. Make sure you understand all operating and maintenance instructions before using the machine. (Part no. 90-900-00 on 20" and larger machines; 90-900-01 on 18" and smaller machines.)

Chapter 3

DynaPrep MDSF Features and Accessories

.....

STANDARD FEATURES

The DynaPrep MDSF standard configuration includes the following components:

- ring assembly with clamp legs
- two tool slides, with parting and/or beveling tools
- one or more trip assemblies to feed the tool slides
- air, hydraulic, or electric drive motor.

Cutting accessories are available for additional applications:

- O.D. tracking slides for cutting out-of-round pipe
- counterbore slides for counterboring the inside diameter of a pipe
- bridge slide for counterboring, facing, or single-point beveling of heavy-wall pipe
- heavy-wall parting slides
- flange facing module.

Figure 3-1 illustrates the standard components of the DynaPrep MDSF.

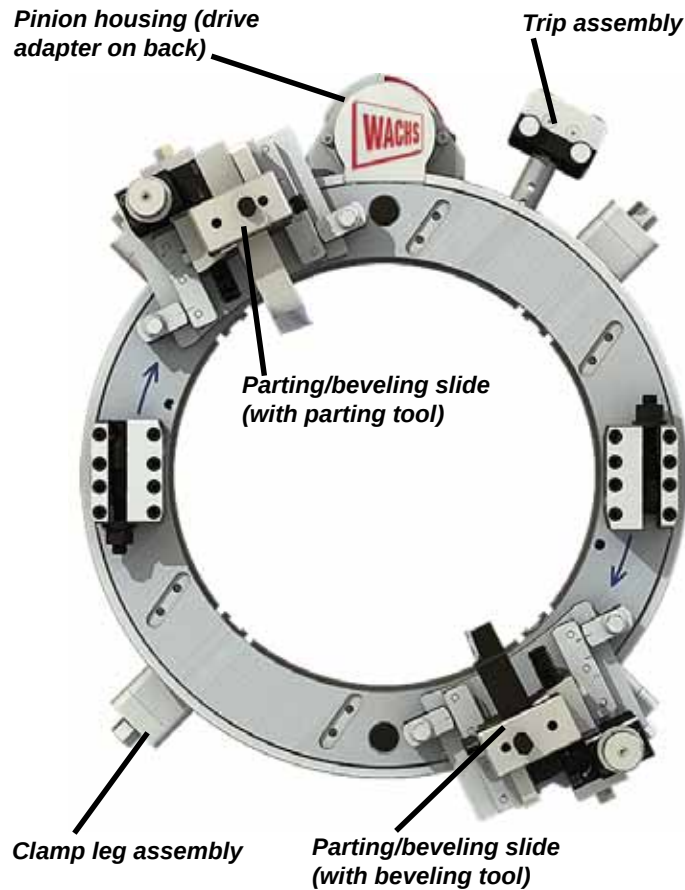


Figure 3-1. The illustration shows the standard components of the DynaPrep MDSF. (Model 612 shown.)

Pinion Drive Options

Three pinion drive options are available. Their compatibility with available drive motors are described in Table 1.

All pinion drives attach to a standard mount on the stationary ring using 4 captivated screws.

Table 1: Pinion Drive and Drive Motor Options

Pinion Assembly	Drive Motor Compatibility
Standard spline pinion (69-4482-01)	3 HP pneumatic, right angle (69-4351-00; 69-4353-00 with handle)
Front drive spline pinion (69-4483-01)	4 HP pneumatic (69-4355-00; 69-4356-00 with handle)
	EPD electric (69-4357-01 single phase 230 V; 69-4357-03 3-phase 220-480 V)
	Hydraulic (69-4357-00)

Table 1: Pinion Drive and Drive Motor Options

Pinion Assembly	Drive Motor Compatibility
Legacy (square drive) pinion (69-4480-01) Legacy pinion front drive (69-4481-01)	2.5 HP LCSF pneumatic reversible (60-4010-01)

TOOLING KITS

Table 2: Tooling Holder Kits

Kit Part No.	Description
69-7007-00	4:1 Counterbore Holder Kit
69-7007-01	30° Single Point Counterbore Holder Kit
69-7003-01	37.5° Outside Bevel Holder Kit
69-7005-01	30° Outside Bevel Holder Kit
69-7008-01	10°-37.5° Compound Inside Bevel Holder Kit
69-7009-01	10°-37.5° Compound Outside Bevel Holder Kit
69-7010-00	Flange Facing Holder Kit
69-7002-03	37.5° Inside Bevel Holder Kit
69-7004-02	30° Inside Bevel Holder Kit
69-7020-01	10°-30° Compound Inside Bevel Holder Kit

OPERATING ENVELOPE

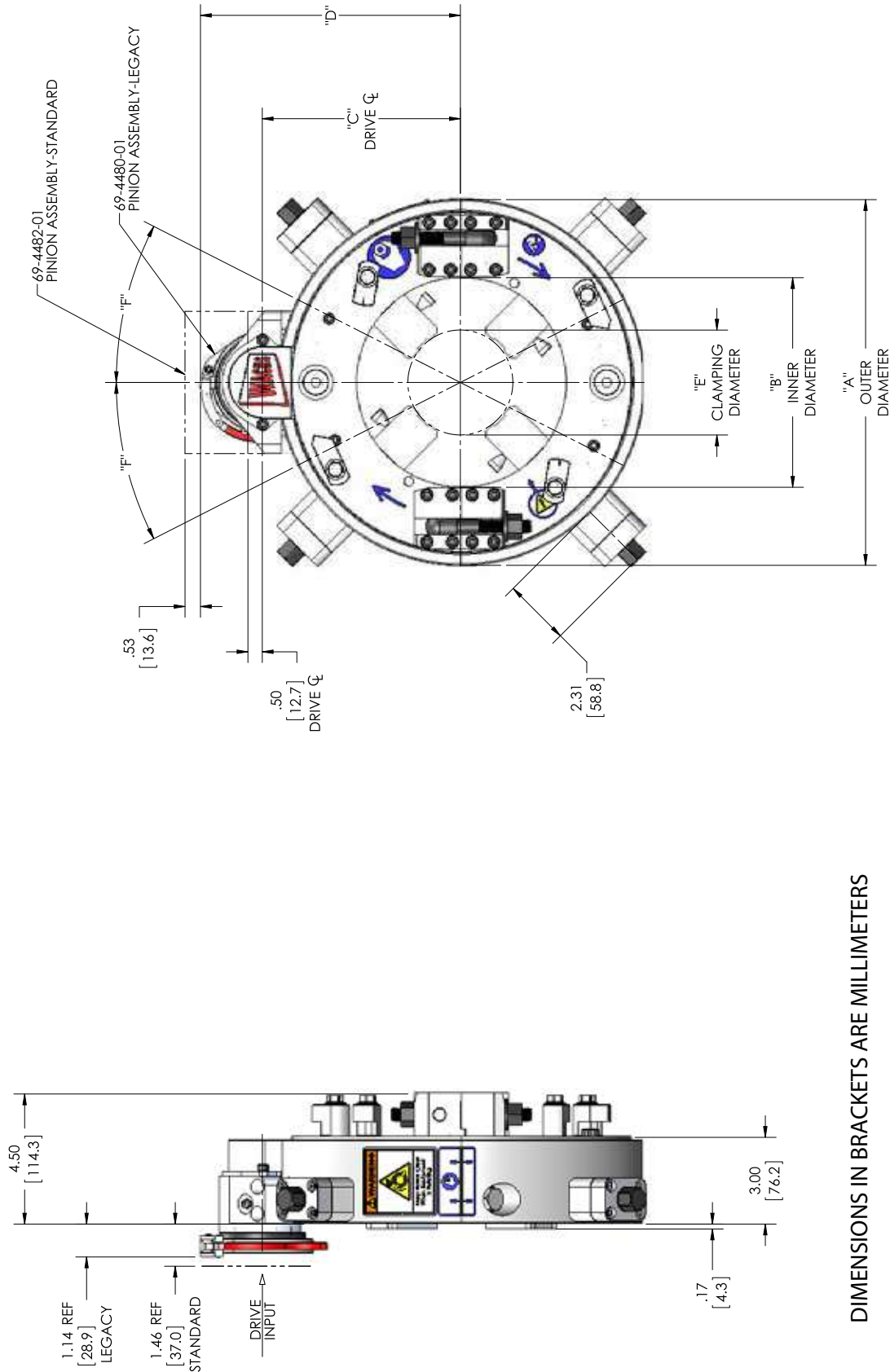
The DynaPrep MDSF is designed to mount on the outside of a pipe for cutting and beveling operations. The machine can be split into halves to mount around inline pipe, or mounted directly over the end of an open-ended pipe. Machines are available to cover a pipe size range of 2" to 60" O.D.

A variety of drive attachments are available for operating the machine in any environment, including where clearances are limited.

The drawings and tables on the following pages illustrate the operating capacities and dimensions of all DynaPrep MDSF models.

Operating Envelope—Models 206-610

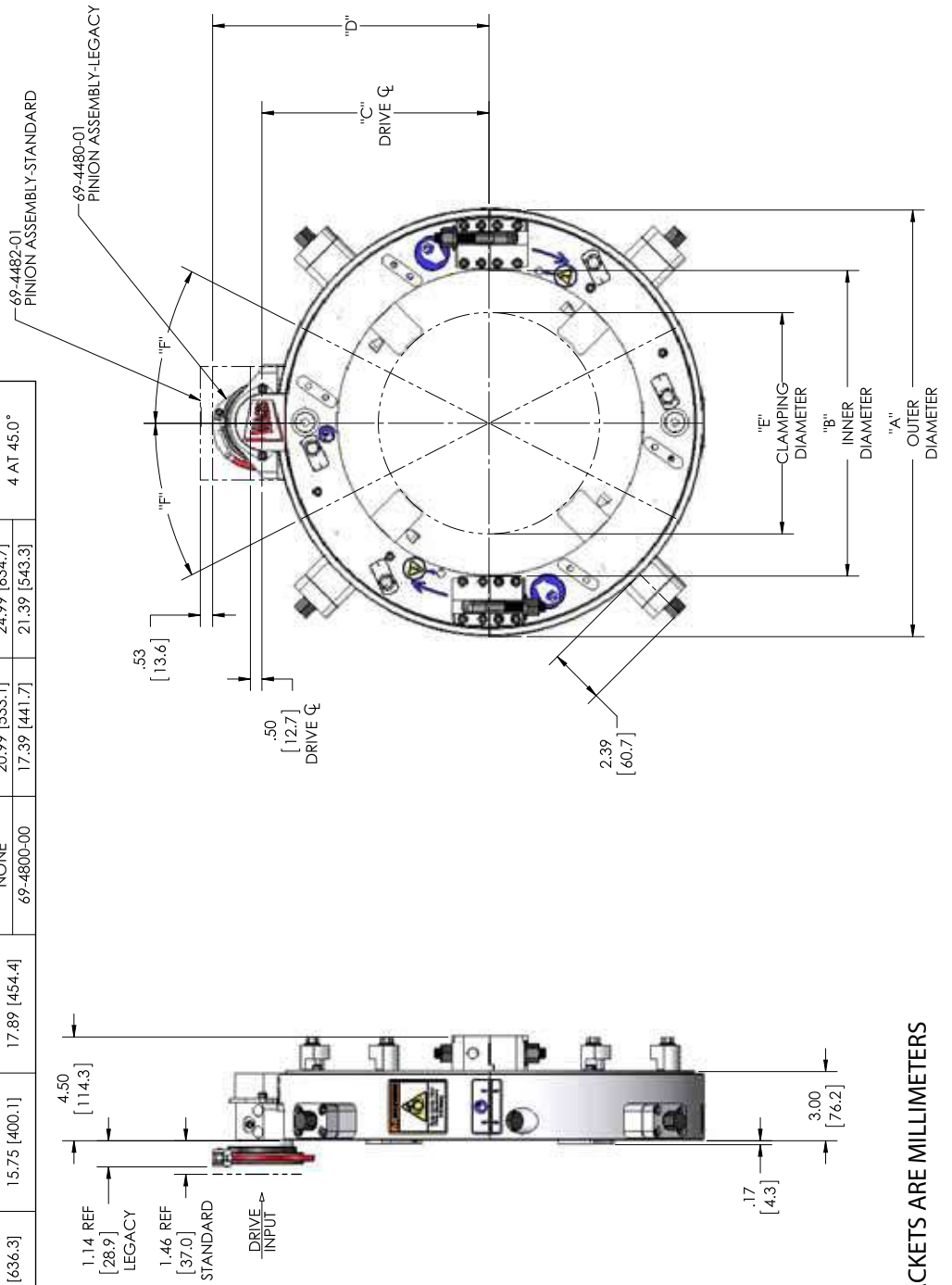
MODEL	DIM. "A" OUTER DIAMETER	DIM. "B" INNER DIAMETER	DIM. "C" DRIVE ϕ	DIM. "D"	EXTENSION LEG	DIM. "E" MIN. CLAMPING DIA.	DIM. "E" MAX. CLAMPING DIA.	NO. OF TRIP LOCATIONS ATF °
MDSF 206	12.65 [321.3]	7.25 [184.2]	6.85 [174.0]	8.99 [228.3]	NONE	3.24 [82.2]	7.21 [183.2]	1 AT 180.0°
					69-4800-00	1.36 [34.5]	3.63 [92.2]	
MDSF 408	14.53 [369.1]	9.25 [235.0]	7.85 [199.4]	9.99 [253.7]	NONE	5.21 [132.2]	9.21 [233.8]	2 AT 169.0°
					69-4800-00	1.67 [42.5]	5.62 [142.6]	
MDSF 610	16.50 [419.1]	11.25 [285.8]	8.85 [224.8]	10.99 [279.1]	NONE	7.21 [183.2]	11.20 [284.6]	2 AT 27.0°
					69-4800-00	3.63 [92.2]	7.61 [193.3]	



DIMENSIONS IN BRACKETS ARE MILLIMETERS

Operating Envelope—Models 612-1824

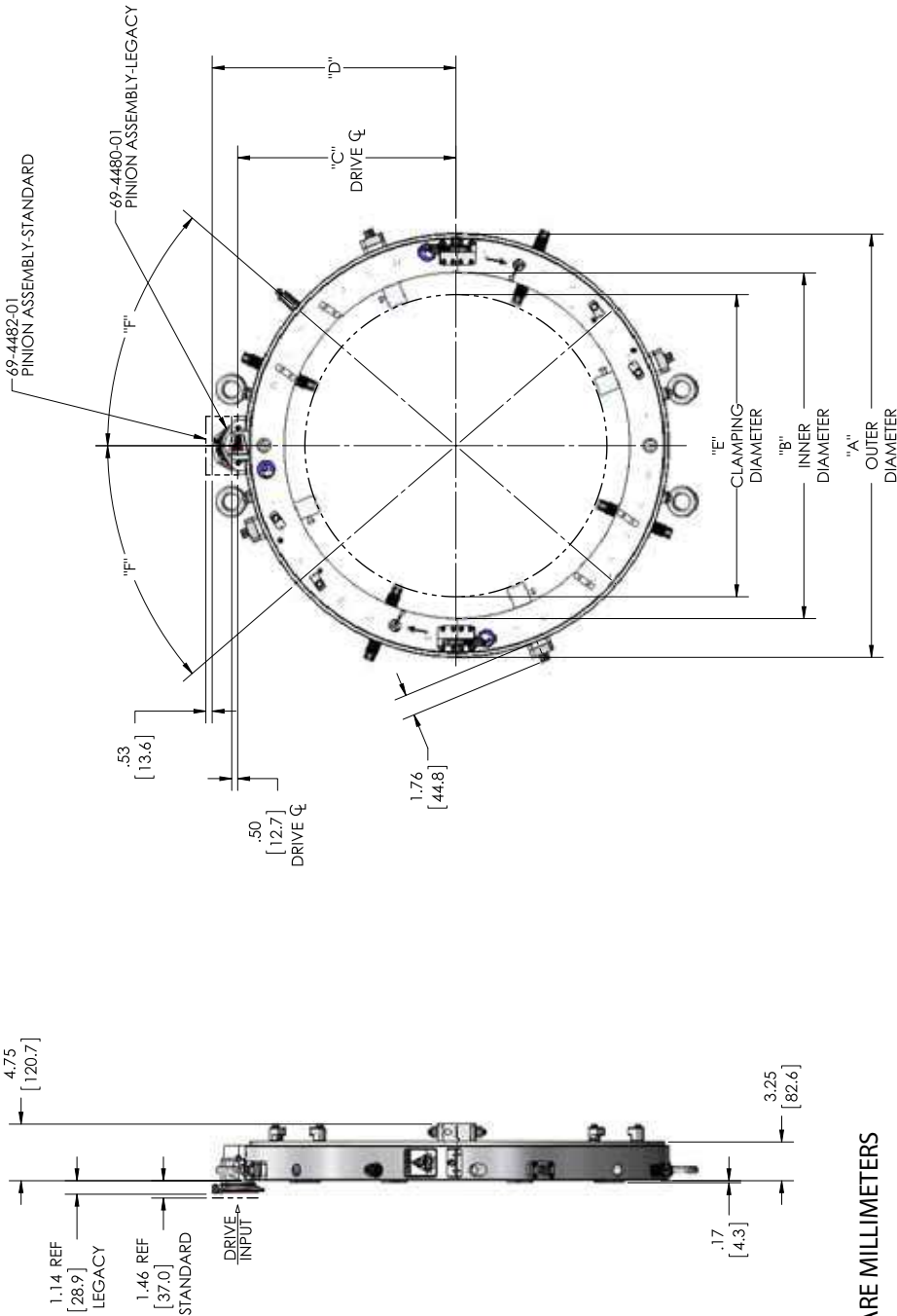
MODEL	DIM. "A" OUTER DIAMETER	DIM. "B" INNER DIAMETER	DIM. "C" DRIVE ϕ	DIM. "D"	EXTENSION LEG	DIM. "E" MIN. CLAMPING DIA.	DIM. "E" MAX. CLAMPING DIA.	NO. OF TRIP LOCATIONS AT F °
MDSF 612	18.50 [469.9]	13.25 [336.6]	9.85 [250.2]	11.99 [304.5]	NONE	9.20 [233.6]	13.20 [335.2]	2 AT 27.0°
MDSF 814	19.90 [505.5]	14.65 [372.1]	10.55 [268.0]	12.69 [322.3]	NONE	5.60 [142.2]	9.60 [243.8]	2 AT 27.0°
MDSF 1016	21.95 [557.5]	16.65 [422.9]	11.55 [293.4]	13.69 [347.7]	NONE	7.00 [177.7]	11.00 [279.3]	4 AT 22.5°
MDSF 1218	23.95 [608.3]	18.65 [473.7]	12.55 [318.8]	14.69 [373.1]	NONE	12.59 [319.9]	16.59 [421.5]	4 AT 22.5°
MDSF 1420	25.95 [659.1]	20.65 [524.5]	13.55 [344.2]	15.69 [398.5]	NONE	9.00 [228.5]	13.00 [330.1]	4 AT 22.5°
MDSF 1824	30.35 [770.9]	25.05 [636.3]	15.75 [400.1]	17.89 [454.4]	NONE	14.59 [370.6]	18.59 [472.2]	4 AT 45.0°



DIMENSIONS IN BRACKETS ARE MILLIMETERS

Operating Envelope—Models 2228-4248

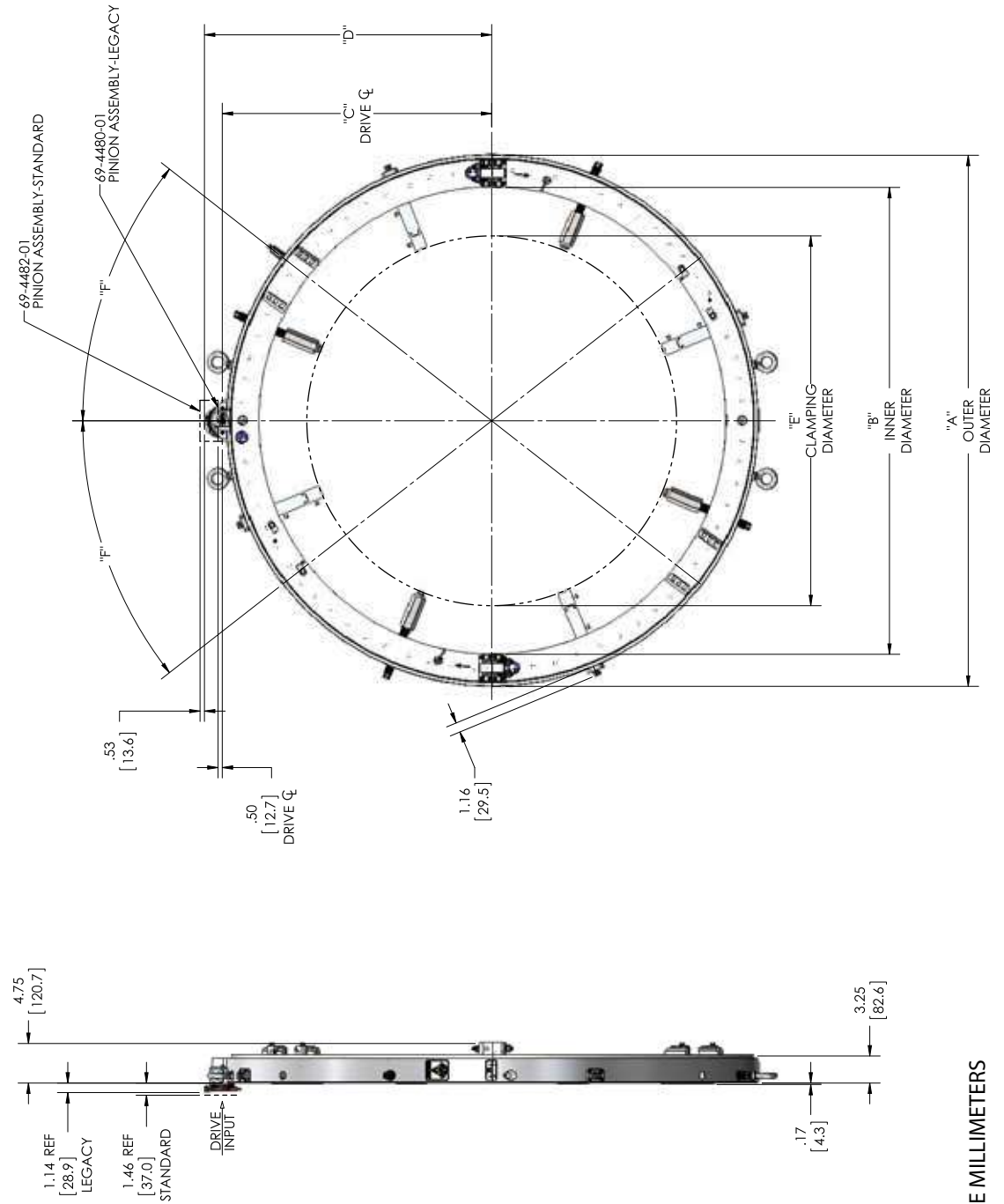
MODEL	DIM. "A" OUTER DIAMETER	DIM. "B" INNER DIAMETER	DIM. "C" DRIVE Q	DIM. "D"	EXTENSION LEG	DIM. "E" MIN. CLAMPING DIA.	DIM. "E" MAX. CLAMPING DIA.	NO. OF TRIP LOCATIONS AT F °
MDSF 2228	35.55 [903.0]	29.05 [737.9]	18.35 [466.1]	20.49 [520.4]	NONE	25.00 [634.9]	29.00 [736.5]	4 AT 40.8°
MDSF 2632	39.55 [1004.6]	33.05 [839.5]	20.35 [516.9]	22.49 [571.2]	69-4800-00	21.40 [543.5]	25.40 [645.1]	4 AT 40.8°
MDSF 3036	44.15 [1121.4]	37.65 [956.3]	22.65 [575.3]	24.79 [629.6]	NONE	25.40 [645.1]	29.40 [746.8]	4 AT 35.5°
MDSF 3642	50.15 [1273.8]	43.65 [1108.7]	25.65 [651.5]	27.79 [705.8]	69-4800-00	33.59 [853.3]	37.59 [954.9]	4 AT 38.0°
MDSF 4248	56.15 [1426.2]	49.65 [1261.1]	28.65 [727.7]	30.79 [782.0]	NONE	39.59 [1005.7]	43.59 [1107.3]	4 AT 38.0°
					69-4800-00	35.99 [914.2]	39.99 [1015.8]	4 AT 38.0°
					69-4800-00	45.59 [1158.1]	49.59 [1259.7]	4 AT 38.0°
					69-4800-00	41.99 [1066.6]	45.99 [1168.2]	4 AT 38.0°



DIMENSIONS IN BRACKETS ARE MILLIMETERS

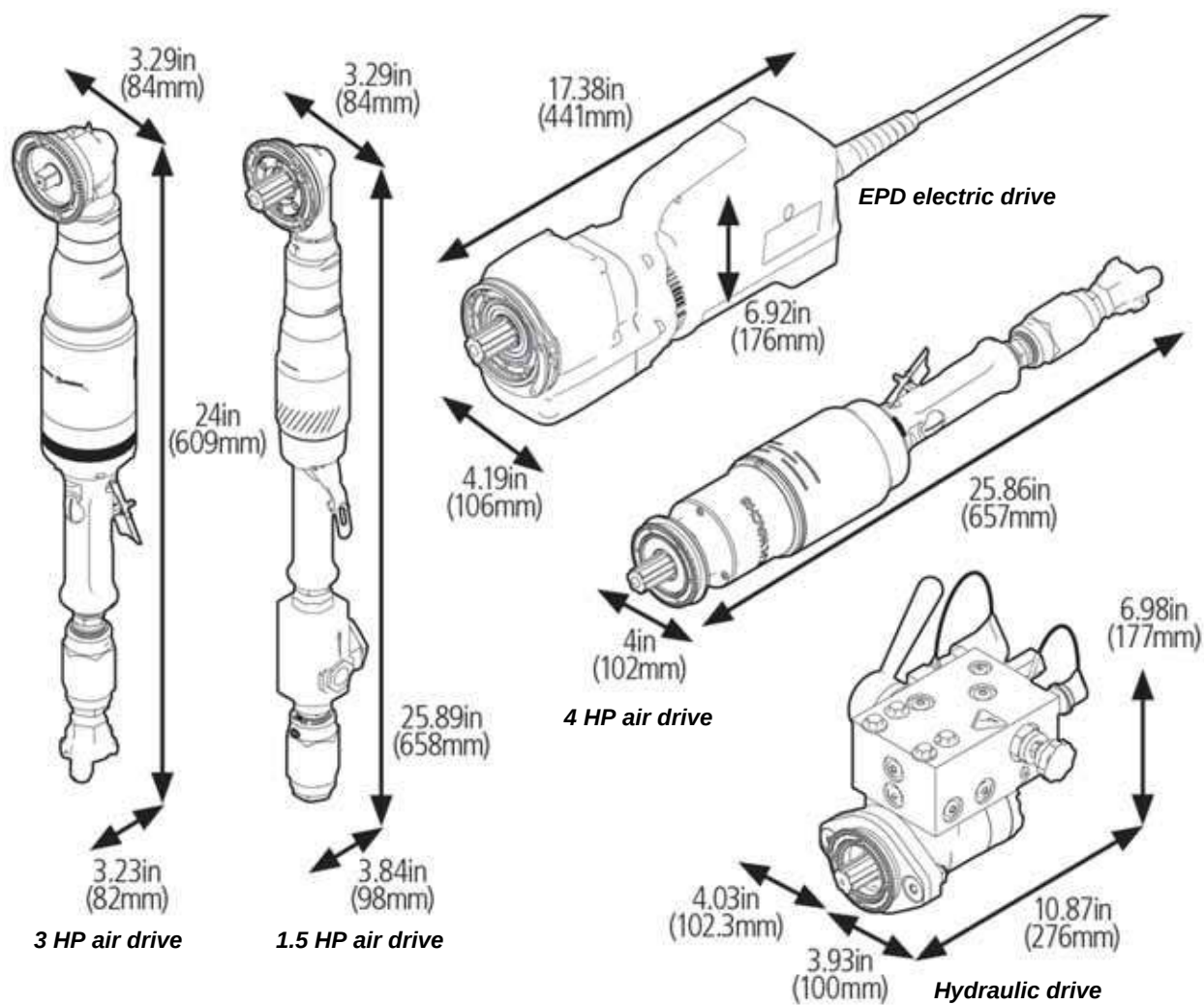
Operating Envelope—Models 4854-5460

MODEL	DIM. "A" OUTER DIAMETER	DIM. "B" INNER DIAMETER	DIM. "C" DRIVE ϕ	DIM. "D"	EXTENSION LEGS	DIM. "E" MIN. CLAMPING DIA.	DIM. "E" MAX. CLAMPING DIA.	NO. OF TRIP LOCATIONS ATF °
MDSF 4854	63.75 [1619.3]	56.05 [1423.7]	32.35 [821.7]	34.49 [876.0]	NONE	51.99 [1320.6] 40.39 [1026.0]	55.99 [1422.2] 44.39 [1127.6]	4 AT 38.0°
MDSF 5460	69.75 [1771.7]	62.05 [1576.1]	35.35 [897.9]	37.49 [952.2]	NONE	57.99 [1473.0] 46.39 [1178.4]	61.99 [1574.6] 50.39 [1280.0]	4 AT 38.0°



DIMENSIONS IN BRACKETS ARE MILLIMETERS

Drive Motor Dimensions



Chapter 4

Set-Up Instructions

Before setting up and using the DynaPrep MDSF, make sure you have carefully reviewed the machinery descriptions in Chapter 3. This chapter and the operation chapters that follow assume that you are familiar with the components and features described in Chapter 3.

**NOTE**

Read Chapter 2, “Safety”, and understand all guidelines for safe operation before using the DynaPrep MDSF.

PIPE SIZE RANGES

Table 1 lists the pipe size ranges for all DynaPrep MDSF models. Refer to the drawings in Chapter 3 for operating envelope dimensions.

Table 1: DynaPrep MDSF Pipe Cutting Capacities

MDSF Model	Pipe NPS Inches	Pipe DN mm	Pipe O.D. Range	
			Standard legs only	With leg extensions
206	2-4	50-100	3.24"-7.21" 82.2-183.2 mm	1.36"-3.63" 34.5-92.2 mm
408	4-8	100-200	5.21"-9.21" 132.2-233.8 mm	1.67"-5.62" 42.5-142.6 mm
610	4-10	100-250	7.21"-11.20" 183.2-284.6 mm	3.63"-7.61" 92.2-193.3 mm
612	4-12	100-300	9.20"-13.20" 233.6-335.2 mm	5.60"-9.60" 142.2-243.8 mm
814	4-14	100-350	10.59"-14.59" 269.1-370.7 mm	7.00"-11.00" 177.7-279.3 mm
1016	4-16	100-400	12.59"-16.59" 319.9-421.5 mm	9.00"-13.00" 228.5-330.1 mm
1218	6-18	150-450	14.59"-18.59" 370.6-472.2 mm	10.99"-14.99" 279.2-380.8 mm
1420	8-20	200-500	16.59"-20.59" 421.4-523.0 mm	12.99"-16.99" 330.0-431.6 mm
1824	12-24	300-600	20.99"-24.99" 533.1-634.7 mm	17.39"-21.39" 441.7-543.3 mm
2228	16-28	400-700	25.00"-29.00" 634.9-736.5 mm	21.40"-25.40" 543.5-645.1 mm
2632	20-32	500-800	29.00"-32.99" 736.5-838.1 mm	25.40"-29.40" 645.1-746.8 mm
3036	24-36	600-900	33.59"-37.59" 853.3-954.9 mm	29.99"-33.99" 761.9-863.5 mm
3642	30-42	750-1050	39.59"-43.59" 1005.7-1107.3 mm	35.99"-39.99" 914.2-1015.8 mm
4248	36-48	900-1200	45.59"-49.59" 1158.1-1259.7 mm	41.99"-45.99" 1066.6-1168.2 mm
4854	42-54	1050-1350	51.99"-55.99" 1320.6-1422.2 mm	40.39"-44.39" 1026.0-1127.6 mm
5460	48-60	1200-1500	57.99"-61.99" 1473.0-1574.6 mm	46.39"-50.39" 1178.4-1280.0 mm

MOUNTING AND CENTERING THE MACHINE ON THE PIPE

This section describes mounting the DynaPrep MDSF on the workpiece. After completing this procedure, go to the chapter for the operation you are performing. These chapters describe how to install tool slide(s) and perform the cutting operation:

- Chapter 5, Operating with Standard Slides
- Chapter 6, Operating with O.D. Tracking Slides
- Chapter 7, Operating with a Counterbore Slide
- Chapter 8, Operating with the Bridge Slide.



WARNING

Two or more people are required to mount the DynaPrep MDSF on the pipe. You may also use a lifting device to assist when mounting the machine.

Operating Environment and Clearances

Measure the actual O.D. of the pipe. (If necessary, measure the circumference around the pipe and divide by 3.14 to get the diameter.) Find the O.D. range for your MDSF model in the following table, and select leg extensions where necessary.

Configuring the Clamp Legs

The standard clamping legs have 2" (51 mm) of travel, allowing a 4-inch pipe range. Add clamp leg extensions to the clamping legs to extend their range for smaller pipes. A set of clamp leg extensions is provided, one extension for each clamp leg.

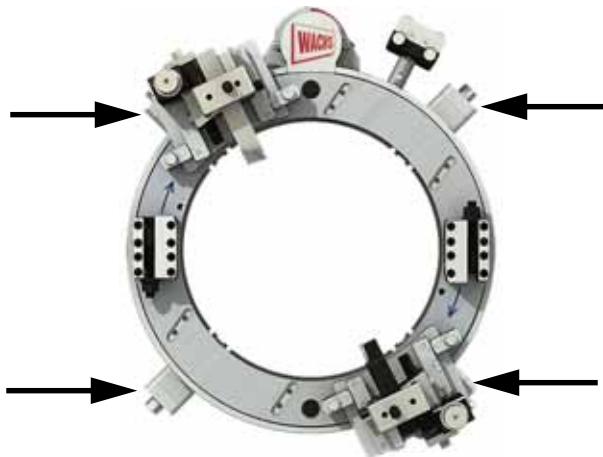


Figure 4-1. DynaPrep MDSF models 612 through 1420 have 4 standard clamp legs.

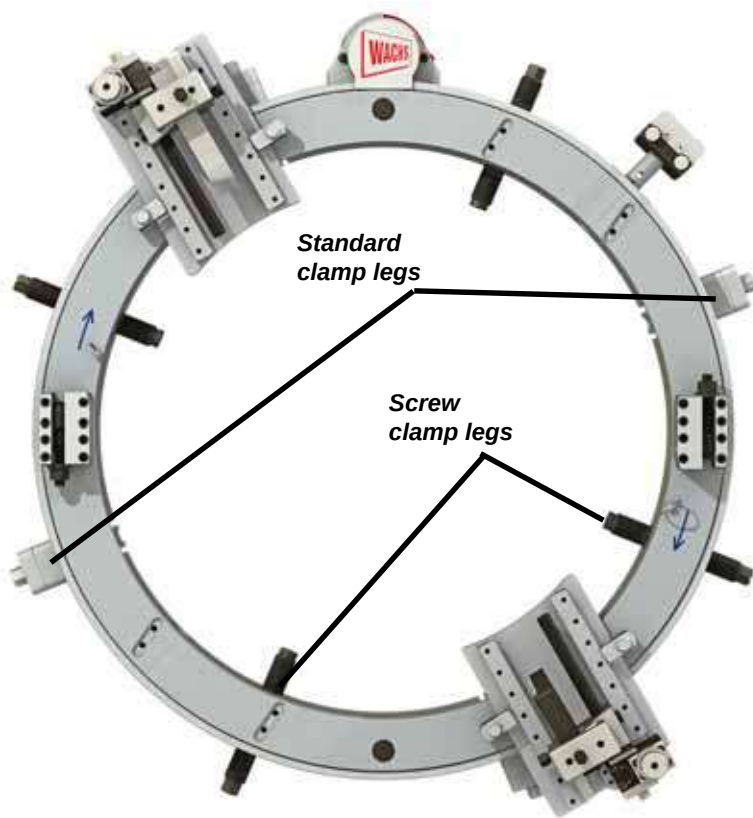


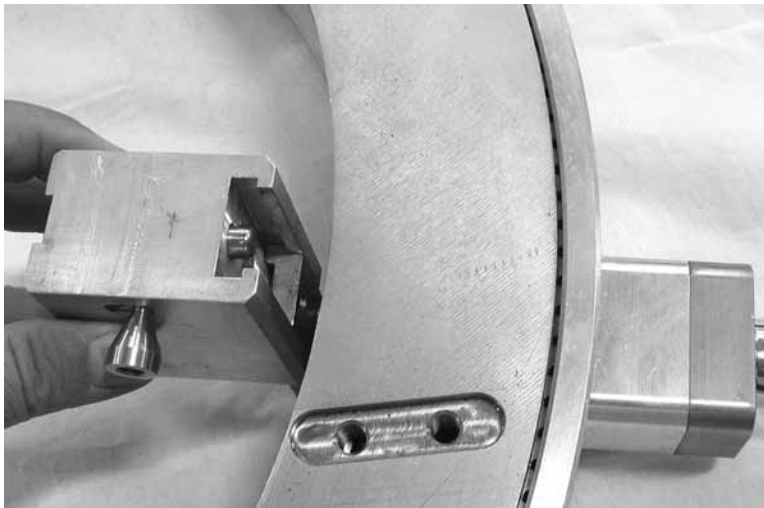
Figure 4-2. Models 1824 and larger have 4 standard clamp legs and 4 screw clamp legs. Use the standard clamp legs to square the machine on the pipe, then snug the screw clamp legs for stability. You can use the screw clamps legs as the primary clamps for specialized applications, such as a miter cut.

Extension Legs

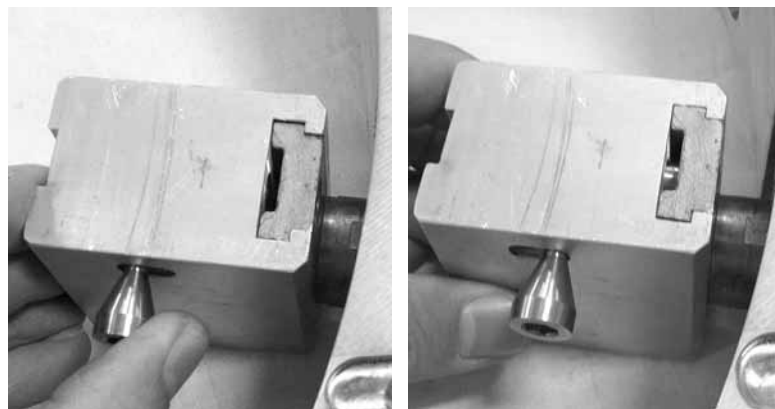
A set of extension legs is provided with the DyanPrep MDSF. The legs extend the length of the standard clamp by 1-3/4" (44 mm).



- 1.** Turn the clamping screw to extend the leg.



- 2.** Slide the extension leg onto the clamp foot.



- 3.** Use the locking pin knob to engage the pin in the clamp foot. Make sure the pin is fully engaged and the extension leg is secure.

Clamp Pad Set

A variety of specialized clamp pads are available with the DynaPrep MDSF. These pads fit onto all clamp legs and extensions.



NOTE

Using clamp pads will decrease the clearance between the machine and the pipe surface. Make sure there is adequate clearance before using the clamp pads.



ATTENTION

Always configure all 4 clamp legs identically (using extensions and/or clamp pads). If the legs are not set up the same, the machine may not clamp securely to the pipe.



**Knurled
contact pad**

**0.5" radius
contact pad**

**Point
contact pad**

**Consumable
contact pad**

**Knurled pivot
contact pad**

Figure 4-3. Use the clamp pads where necessary for mounting the MDSF to the pipe.

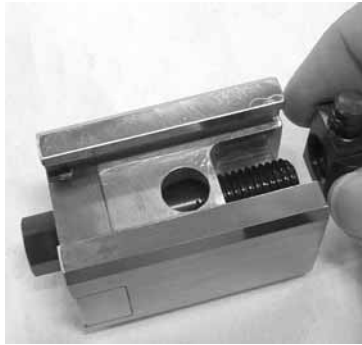
- Knurled pads provide a more secure grip on the pipe.
- The radius pad prevents scratching the pipe surface.
- The point pad will secure to a malleable surface.
- The consumable pad can be welded to the workpiece.
- The pivot pad allows angled setup for miter cutting.



Figure 4-4. Press the clamp pad into the hole on the clamp leg or extension. The rubber o-ring holds the pad in place.

Axial Adjustment Clamp Leg Extensions

The axial adjustment leg extensions allow you to clamp the machine to the pipe, then move it axially. This is useful for squaring the machine, or for fine adjustment of axial position on the pipe. The axial adjustment extensions let you move the machine 0.XX inch along the pipe.



- 1.** Turn the adjustment nut on the axial extension to spin the feed nut off the screw.



- 2.** Insert the pin of the feed nut into one of the holes on the clamp leg. You can install the axial extensions either way.



- 3.** Slide the axial extension onto the clamp leg. Turn the adjustment nut to thread the feed nut onto the screw.

Mounting Machine on Inline Pipe (Split Ring)



WARNING

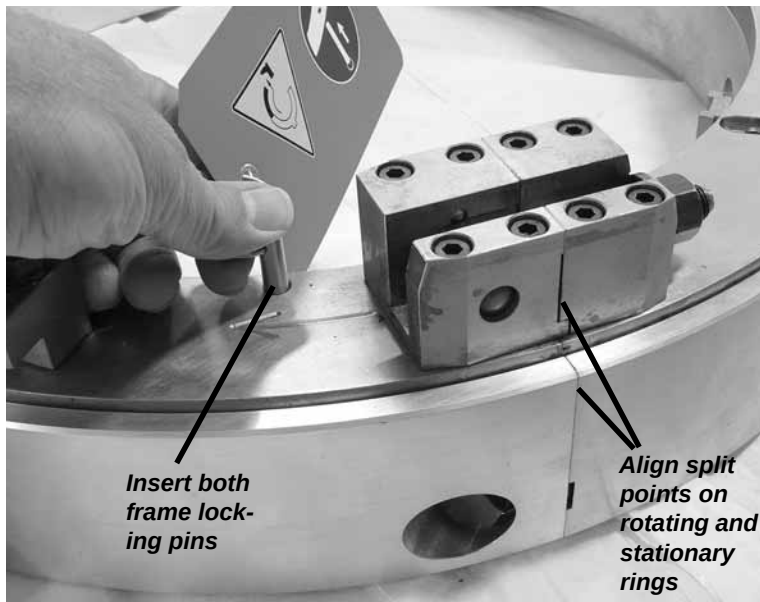
Two or more people are required to mount the DynaPrep MDSF on the pipe. You may also use a lifting device to assist when mounting the machine.

Before mounting the machine on the pipe, have the clamp legs configured with extensions and/or clamp pads as required.

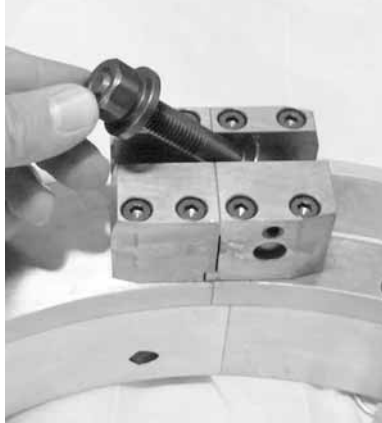
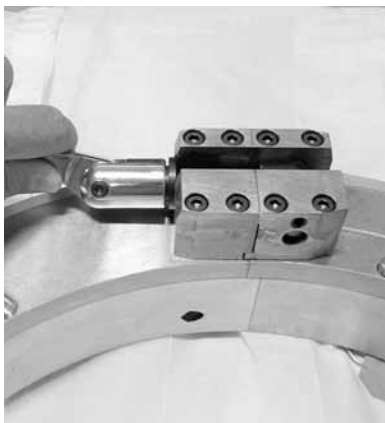
Splitting the Ring

To mount the DynaPrep MDSF on in-line pipe, you will have to split the machine into halves by loosening the frame locking screws at the split points.

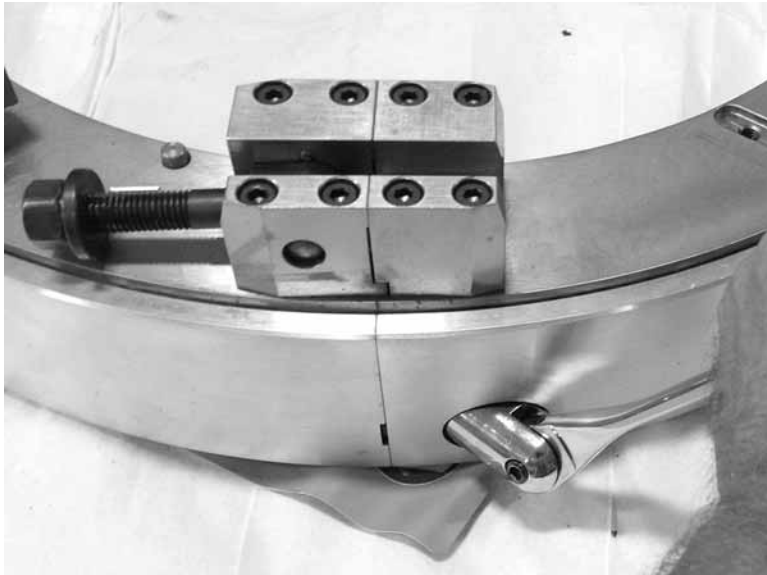
Skip this section if the machine is already split, as when stored in its case.



- 1.** Lay machine on a secure surface with the rotating ring up.
- 2.** Insert the two frame locking pins to keep the rotating and stationary rings together.
 - Turn the rotating ring to align the split points so that you can insert the pins.

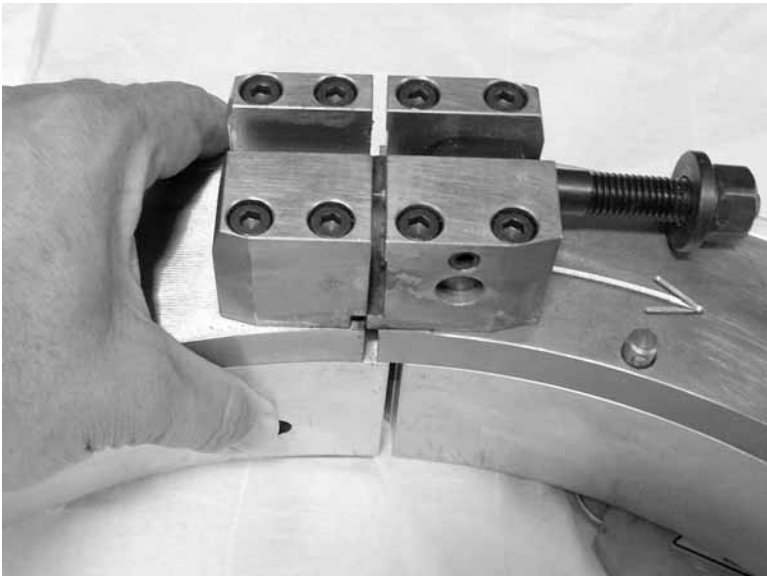


- 3.** Using the 19 mm socket wrench, loosen the nuts on the swing bolts in the rotating ring. Lift the bolts out of the blocks.



4. Using the 19 mm socket wrench, loosen the frame locking bolts until they turn freely.

- *The bolts are captivated.*



5. Pull the halves of the machine apart at the split lines.

- *Use equal force on each side to separate the halves without binding.*
- *Retract the clamp legs fully for maximum working clearance.*





NOTE

Use reasonable force to separate the halves. If you can't pull them apart, check to make sure you have adequately loosened the frame locking screws.

Mounting the Machine



NOTE

To make the setup easier to see, the photos in this section show the machine on an open-ended pipe.



WARNING

Make sure you attach the stationary ring to a section of pipe that will support its weight. Do not clamp the machine onto a pipe section or end that will “fall off” after cutting.



1. Make sure the mating surfaces are clean and free of debris. Wipe down the ends of the stationary and rotating rings thoroughly before putting the machine together.



2. Set the two halves of the machine on top of the work-piece.
 - *The easiest way to put the halves together is with one operator on each side of the pipe. Each operator holds one half of the machine while putting them together.*



NOTE

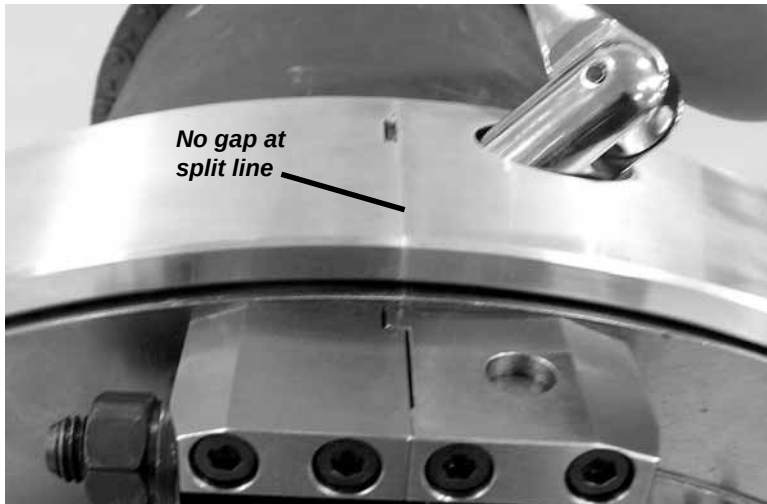
To install the machine on vertical pipe, you may need a lift or support device to support both halves of the machine.



- 3.** Move the halves of the machines to positions where you can press them together.



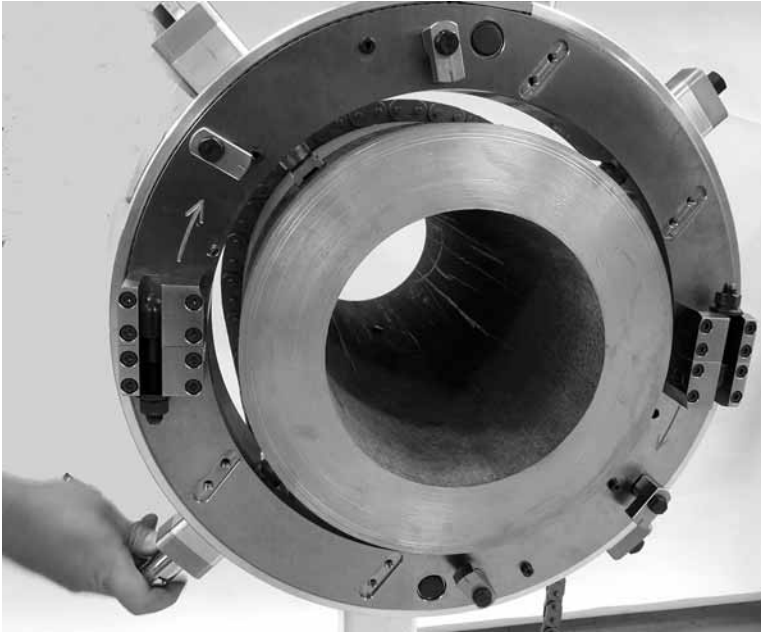
- 4.** Engage the swing bolts in the blocks and snug the nuts to hold the machine together.



- 5.** Snug the frame locking screws to bring the halves of the machine together.
 - *Check that the split lines on both sides are fully closed.*
- 6.** Securely tighten the frame locking screws and the swing bolt nuts. Turn the machine on the pipe to set the pinion housing at a convenient location for operating the drive motor (usually on the top).
 - *Avoid positioning any of the clamping legs on an irregular part of the pipe surface, such as a weld seam.*

**ATTENTION**

Be sure that the frame locking screws and swing bolt nuts are securely tightened before continuing with mounting procedure. Make sure there are no gaps at the split lines. Incorrect assembly may cause damage to drive gears.



- 7.** Screw in the 4 clamping legs equally to roughly center the machine on the pipe.
 - *Snug the 4 clamping legs just enough to hold the machine in place. You will center the machine precisely in the next section.*
 - *On model 1824, use the 4 clamping legs to center and square the machine. Tighten the screws clamps after the machine is centered and squared.*

Mounting Machine on Open-End Pipe (Assembled Ring)

**WARNING**

Two or more people are required to mount the DynaPrep MDSF on the pipe. You may also use a lifting device to assist when mounting the machine.

For open-ended workpieces, slide the machine over the pipe end. It is not necessary to split the machine. **Make sure you are attaching the stationary frame to a section of the pipe that will support its weight. Do not clamp the machine onto a pipe section or end that will “fall off” after cutting.**

Make sure the frame locking screws are tight and the alignment pins are inserted in the machine. Use the same clamping and positioning procedures as for in-line pipe.

Positioning the Machine for the Cut Line

**NOTE**

You should have the machine roughly squared and centered before setting it precisely for the cut line position. Once you have it set at the cut line, do the final squaring and centering.

In most applications, the easiest way to set the cut line location is to mount the slides and tooling, and use the tool itself as a gauge. With the clamping legs just loose enough to move the machine, slide it along the pipe until the tool is positioned on the desired cut line.

You can also set the position by measuring the distance from the machine to the cut line. The “cut line height” is the distance from the surface of the rotating ring to the desired cut location on the pipe. The cut line height depends on the following factors:

- the slides being used
- the cutting operation
- the tooling configuration in the slide.

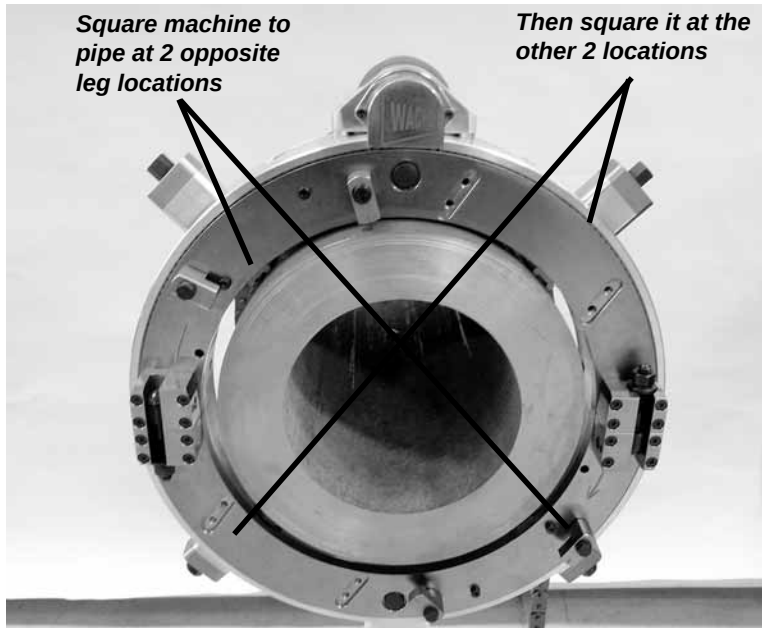
See the chapter for the slides you are using for specific cut line height information.

Squaring and Centering the Machine

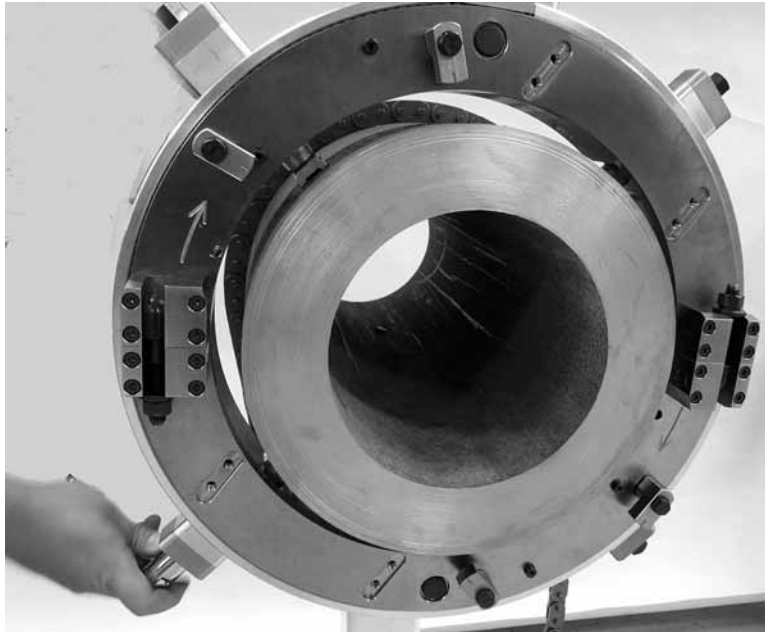
The standard clamping pads are self-squaring. When you snug them, the machine should be very close to squared, unless the pipe surface is irregular.



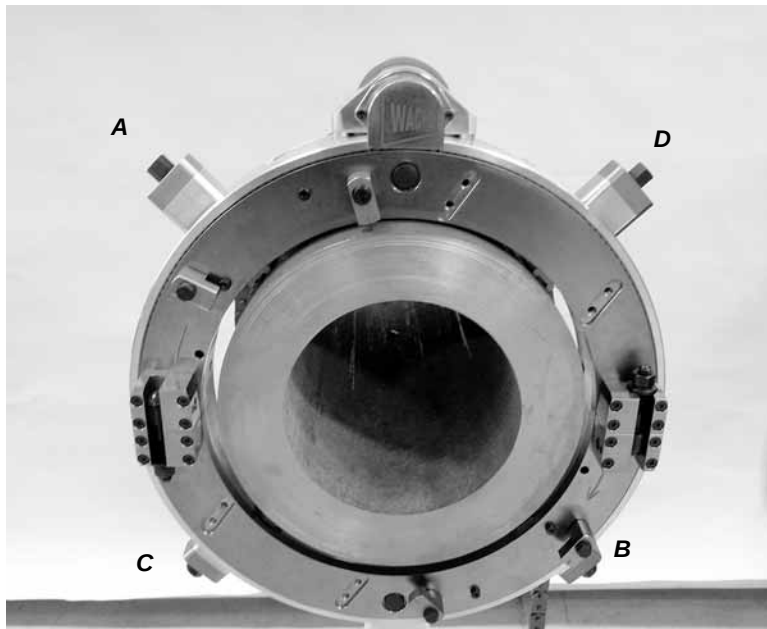
- 1.** Using the provided square, check the squaring of the machine at each clamp leg position.
- 2.** If the machine is not square on the pipe, loosen the clamp legs slightly. You should be able to push on the machine or tap it with a rubber mallet to move it, but it should not move freely.



- 3.** Hold the square at one of the leg positions and nudge the machine to square it. Snug down the clamp leg at that position, and the leg at the opposite position.
- 4.** Move the square to one of the legs 90° from the first leg. Nudge the machine to square it, then snug down the final 2 clamp legs.
 - *Check the squaring again at all 4 legs. If necessary, repeat the adjustment.*
 - *Leave the clamp legs just snug to hold the machine in position, but not tightened.*
- 5.** Center the machine by measuring the gap between the I.D. of the machine and the pipe surface at opposite clamp legs.
 - *On the side closer to the pipe, loosen the clamp leg screw by one turn, then tighten the opposite leg by one turn. Continue until the gap is the same on both sides.*
 - *Leave the legs snug but not tightened.*



6. Measure the gaps at the other 2 legs, and perform the same adjustment to make them equal.
7. Check the cut line position again before tightening the clamp leg screws.
8. Remove the frame locking pins. Manually rotate the machine a full 360° to make sure it turns freely.



9. Tighten the clamp legs alternately, by 10-20 lb-ft increments, as shown in the picture:
 - Tighten A & B together.
 - Tighten C & D together.
 - Repeat until all clamp legs are tightened to approximately 50 lb-ft.

Installation on Vertical Pipe

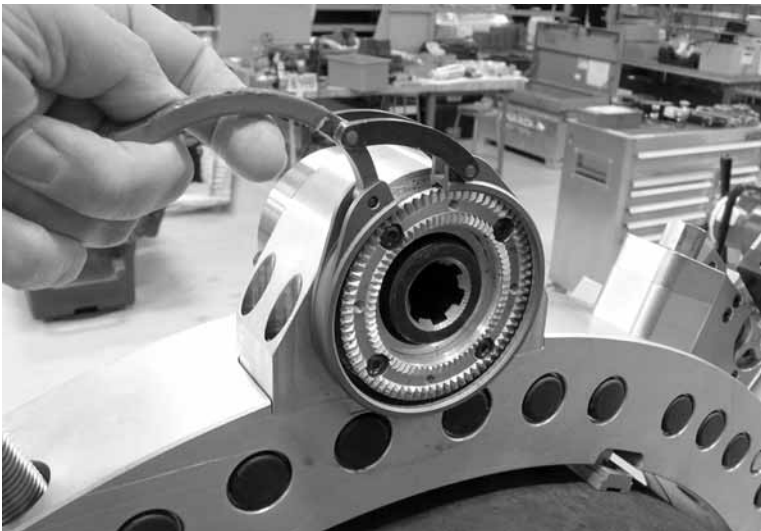
The DynaPrep MDSF can be installed on in-line or open-ended vertical pipe, with the machine in a horizontal position. Set-up and operating procedures are the same as for horizontal pipe. However, observe the following guidelines for machining vertical (or other non-horizontal angle) workpieces.

- Make sure the machine is adequately supported until you tighten the clamp feet securely on the workpiece.
- Refer to the weight chart in Chapter 2 to determine if multiple operators or a lifting device are needed to help support the machine.
- The MDSF is easier to handle in a horizontal position when the ring halves are assembled. If possible, install it as an assembled ring.
- If you need to split the machine to install on in-line pipe, make sure each half is supported until installation is complete. Two lifting devices may be required, one for each half of the machine.
- Use a scaffolding or other support structure(s) if available. Make sure the machine rests stably on the support.
- When performing a parting operation, make sure the workpiece is securely supported both above and below the machine.

**NOTE**

For difficult installation environments, a custom mounting adapter can be provided. The adapter can be bolted or welded to the workpiece to hold the DynaPrep MSDF in place. Contact E.H. Wachs customer support to discuss requirements.

MOUNTING THE DRIVE MOTOR

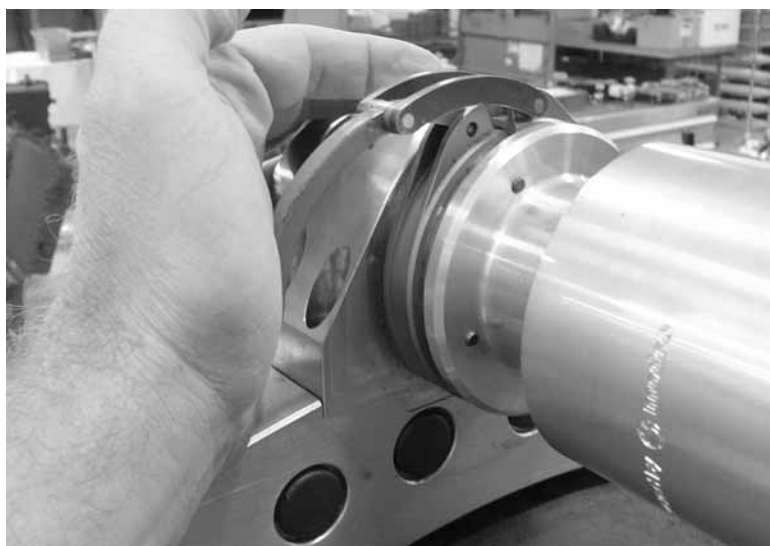


- 1.** Open the motor adapter handle on the pinion housing.



2. Insert the shaft of the drive motor into the pinion gear socket.

- *Rotate the motor as necessary to align the splines or square shaft in the socket.*



3. Clamp the motor adapter handle to secure the motor in place.

- *To remove the motor, open the motor adapter handle again and pull the drive motor shaft out.*



Chapter 5

Operating with Standard Slides

CONFIGURING THE SLIDES

Installing the Tooling

Use the provided tool spacers to set tool positions and offsets. Three different spacers are provided, with 2 of each (one for each slide).

- If you are performing a cutoff operation, always use two parting tools, one in each slide. Either offset the tools using spacers, or use a 3/16" tool in one slide and a 1/4" tool in the other. (Lead with the 3/16" tool.)
- If you are performing a cut and bevel operation, use a parting tool in one slide and a beveling tool in the other. Use spacers to align the tools as required.
- If you are beveling only, you can configure one or both slides with beveling tools. (For a compound bevel only, use only one tool)
- You can also install tooling in the slide with no spacers. This is useful for a situation where clearance behind the MDSF is limited.

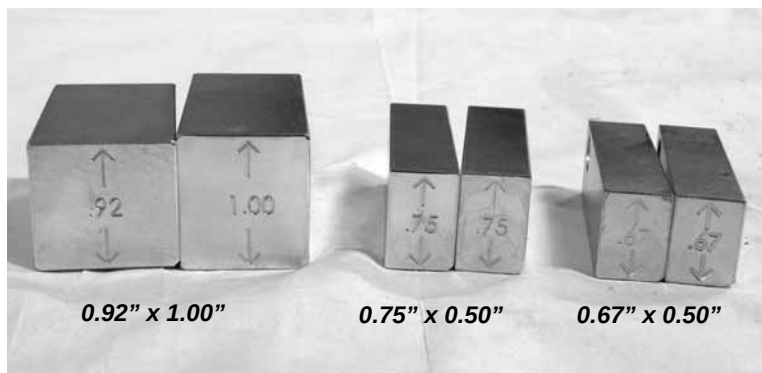


Figure 5-1. Use the spacers in the tool holders to set the tool positions.

- You can install any of the spacers in either orientation.
- Secure the spacer in the tool holder using the screw on the side of the tool holder. Each spacer has 2 holes, one for each orientation.

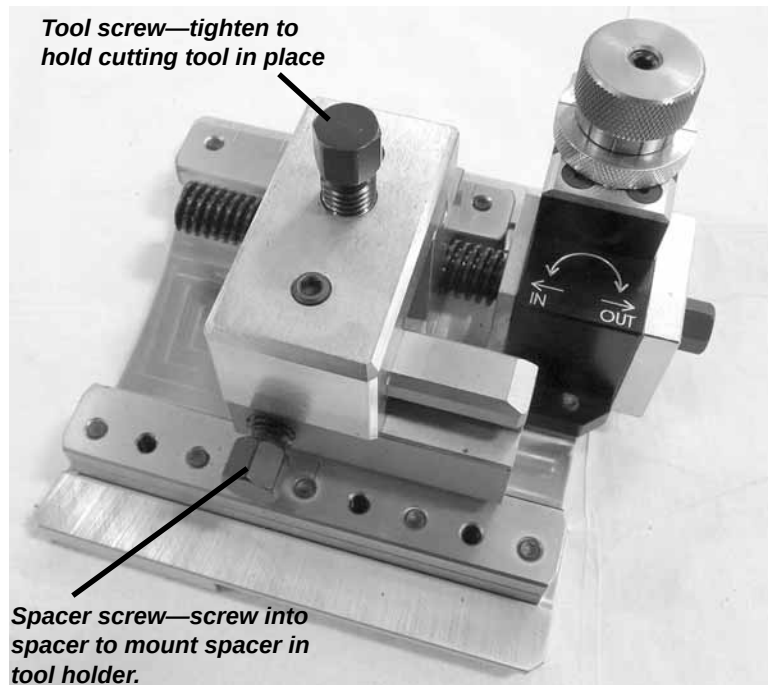


Figure 5-2. Install the spacers and tools using the screws in the tool holder.

- *The spacer screw is also used to hold 1" tooling in the tool holder.*

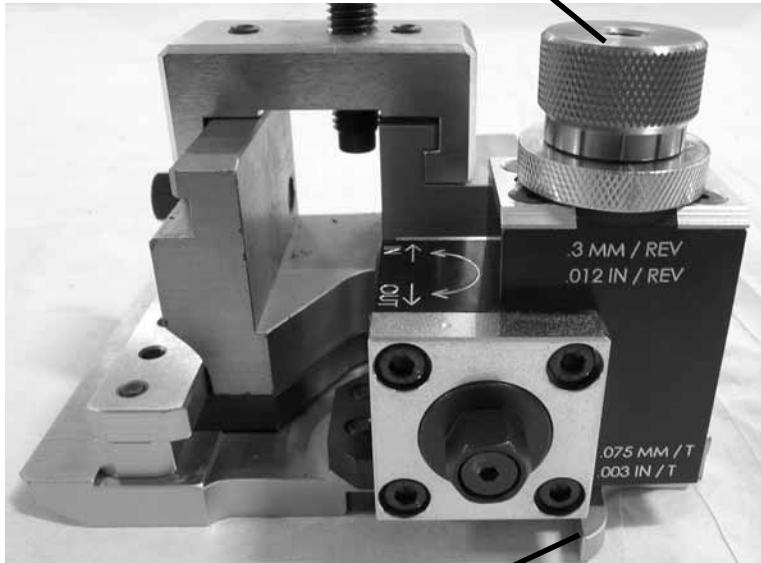
Operating the Slides

The standard slides are available in three sizes. Each size has a different tool travel, or stroke. The slides have a feed rate of 0.003" per trip (one tooth on the starwheel). An optional configuration for each slide offers a "high feed" mechanism with a feed rate of 0.006" per rotation of the starwheel.

- 1.5" stroke (69-5215-03; 69-5215-06 for high feed).
- 2.5" stroke (69-5225-03; 69-5225-06 for high feed).
- 3.5" stroke (69-5235-03; 69-5235-06 for high feed).
- 5.5" stroke (69-5255-03; 69-5255-06 for high feed).

When cutting, engage the number of trips required for the desired feed rate.

Use the manual feed knob to advance or retract the slide to position the tool.



The starwheel is turned by the trip during operation to advance the tool into the workpiece.

Figure 5-3. The standard slides are labeled with the operating dimensions.

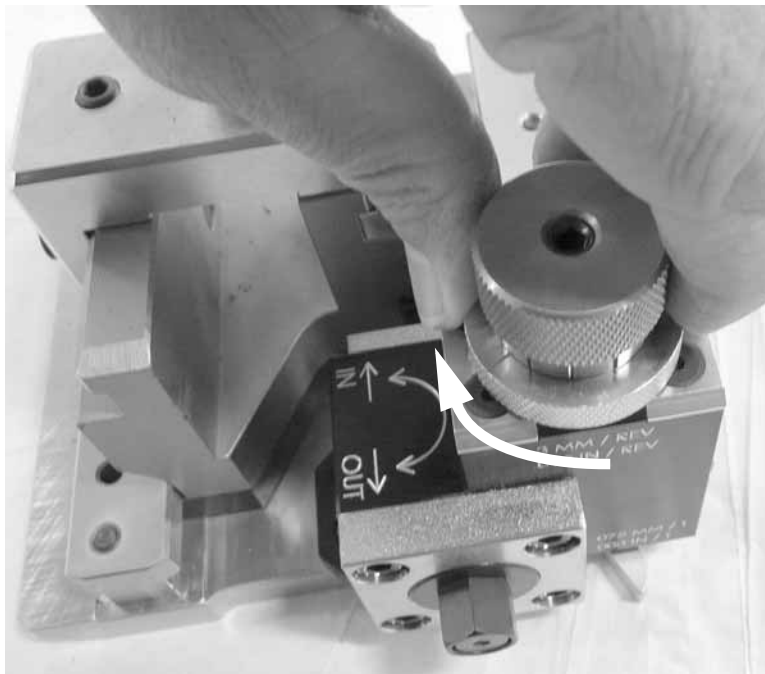
- Turning the manual feed knob (or starwheel) one full turn will feed the slide by 0.012" (0.3 mm).
- Turn the starwheel by one tooth, as with a trip, will feed the slide by 0.003" (0.075 mm).
- The "high feed" option (not shown) feeds at twice the feed rate.

1. To disengage the feed and use the rapid retract feature, turn the feed lock knob clockwise.

- See the red position mark on the lock knob for engaging and disengaging the feed.
- When the lock knob is engaged, the manual feed knob and starwheel will feed the slide.

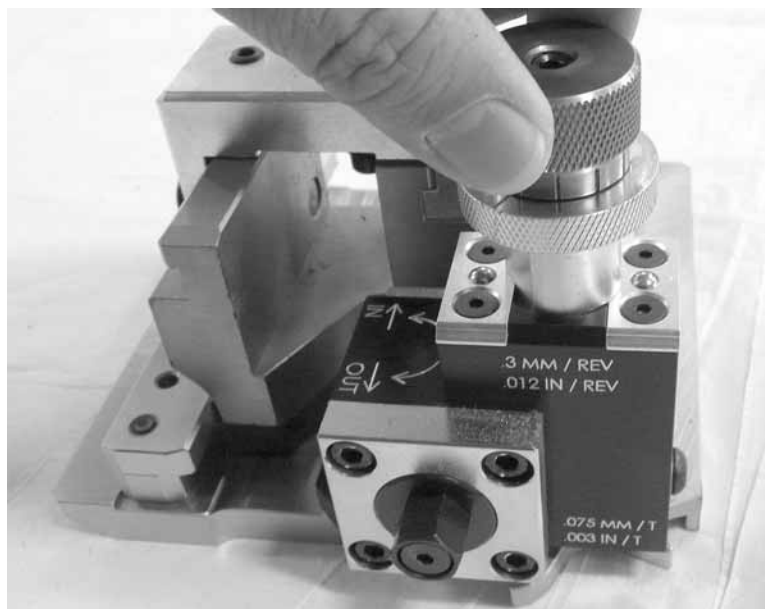


Feed is engaged when the red mark is in this position.



2. Press the feed lock knob down and turn it 1/4 turn clockwise to release the feed mechanism.

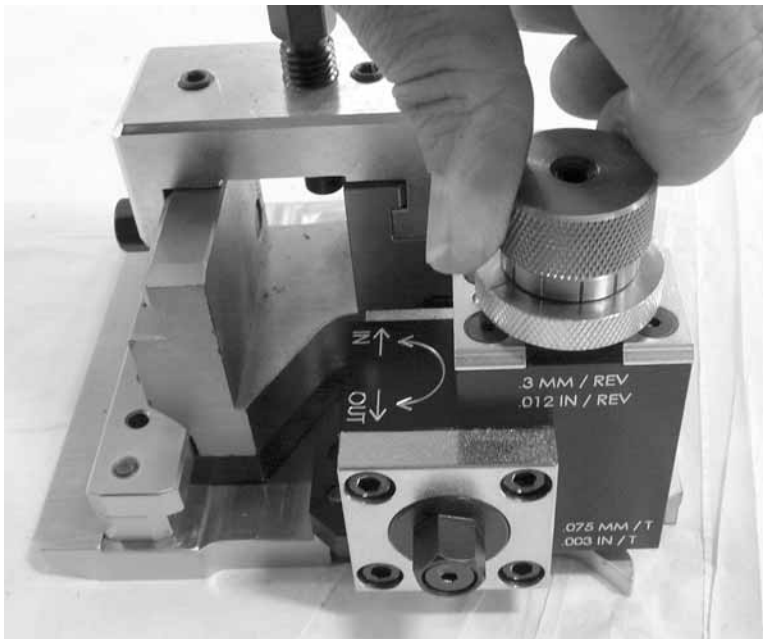
- *The lock knob is spring-loaded; you need to press down firmly to turn it.*



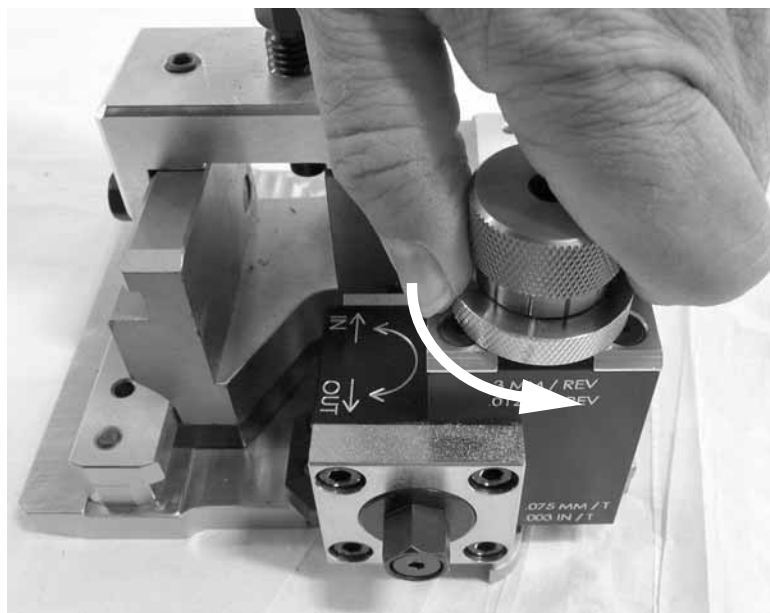
3. Unscrew the manual feed knob until it spins freely.



- 4.** With the feed disengaged, you can use the 13 mm wrench on the rapid retract nut to advance or retract the slide for positioning.
- *This is useful for retracting the slide quickly after performing a cut.*



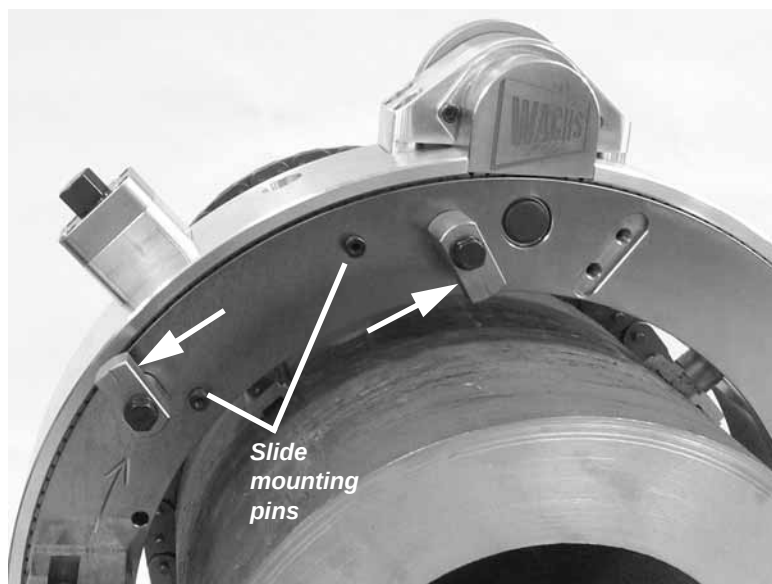
- 5.** To engage the feed again, screw the manual feed knob all the way back down.



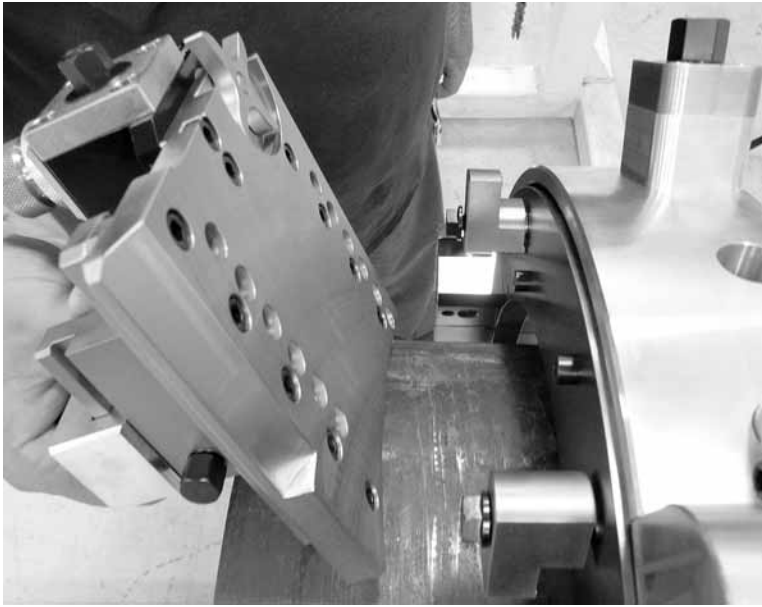
6. Press down the feed lock knob and turn it back to the engaged position.

MOUNTING THE SLIDES TO THE DYNAPREP MDSF

You should have the DynaPrep MDSF mounted to the pipe, according to the instructions in Chapter 4. You can install tooling before putting the slides on the machine, or mount the slides first and then install the tooling.



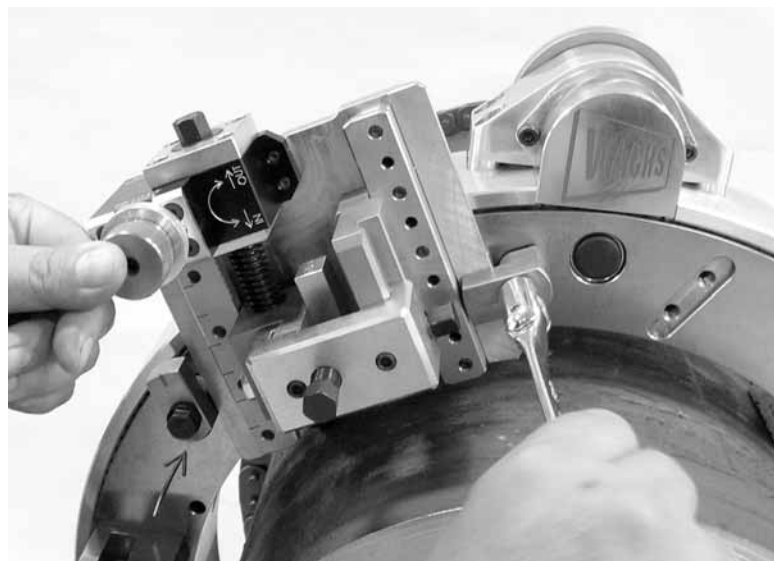
1. Loosen the screws in the slide brackets and turn them to the side as shown.



2. There are several sets of alignment holes in the slide base. Position the holes on the slide mounting pins with the slide at the required position.

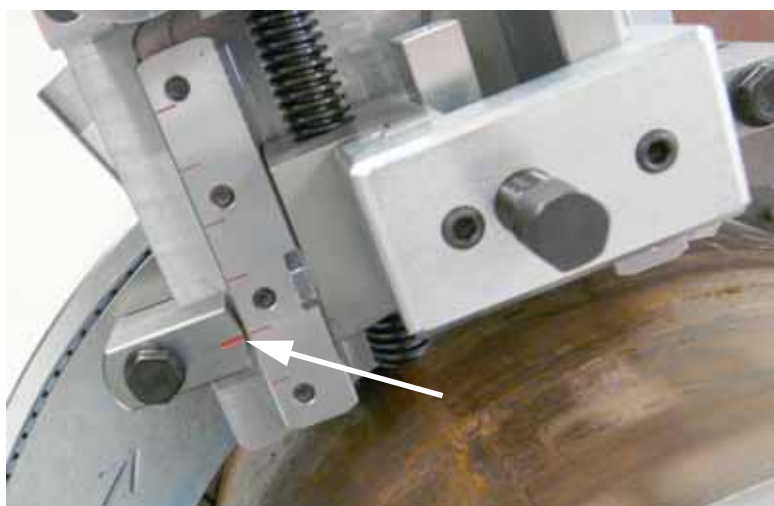
- *The holes allow you to set the slide at the best position for the pipe size.*
- ***Make sure both slides are mounted in the same position.***

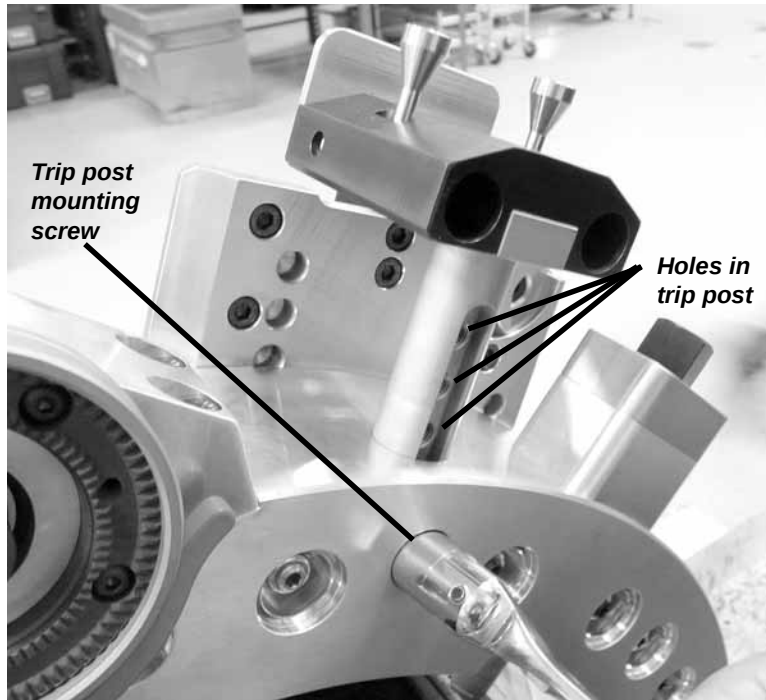




3. Turn the brackets onto the slide base and tighten the screws.

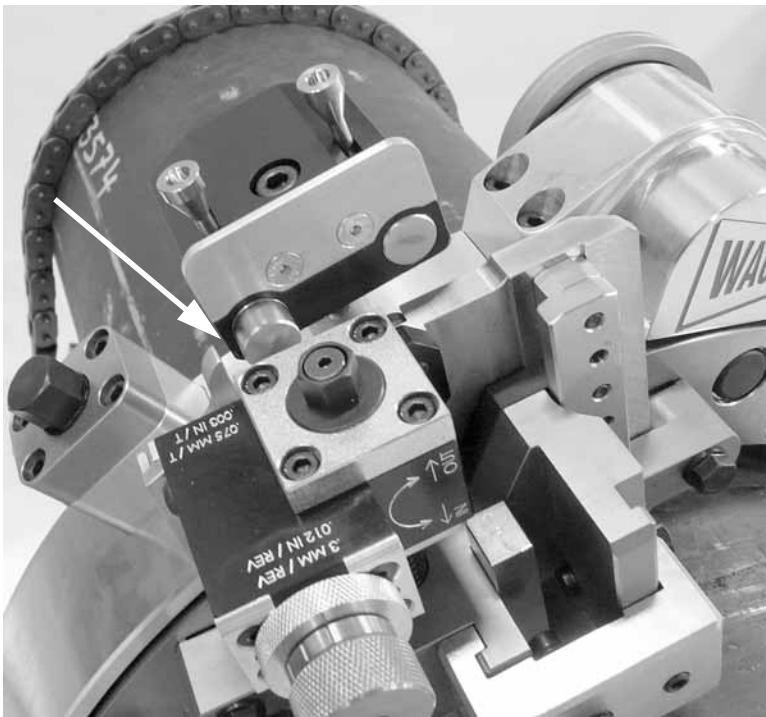
- *Make sure the red alignment mark on the bracket is lined up with one of the red position marks on the slide base.*





4. Set the trip post height to correspond to the slide position.

- There are multiple mounting holes in the trip post, one for each slide position.
- Use the mounting hole corresponding to the red position mark on the slide base. (For example, use the second hole in the post for the second position mark, as shown in the previous figure.)
- Tighten the trip post mounting screw using the 13 mm wrench.
- The screw is captivated. You only need to loosen it to move the trip post.



5. Manually turn the rotating ring to check the alignment of the slide and trip. The star-wheel should strike the trip knob.

- If the starwheel does not contact the trip as shown, adjust the trip position.

OPERATING THE DYNAPREP MDSF

See Chapter 4 for instructions on mounting the drive motor to the machine.

Read Chapter 2, “Safety”, and be familiar with all safe operating guidelines before operating the DynaPrep MDSF.

- 1.** Connect the power source to the drive motor: air, hydraulic, or electric.
- 2.** Feed the slides to position the tools close to the workpiece.
 - If you are using a 3/16” parting tool and a 1/4” parting tool, set the 3/16” parting tool so it leads (closer to the workpiece).
 - When parting and beveling, you can set the bevel tool to lead to split the chip and make cutting easier.
 - If you need to feed the slides in more than a few turns, disable the feed and use the rapid retract to advance them quickly.
- 3.** Make sure the trips are in the disengaged position. Set the motor control to the slowest speed, and operate the DynaPrep MDSF slowly through one rotation while checking for clearance.



Figure 5-4. Push the trip knobs back to disengage the trips before starting the machine.

- 4.** Set the motor control to the desired operating speed. Start the machine.

5. Engage the trip. Use one or two trips, depending on desired feed speed. Keep hands behind the trip guard when operating the trip mechanisms.

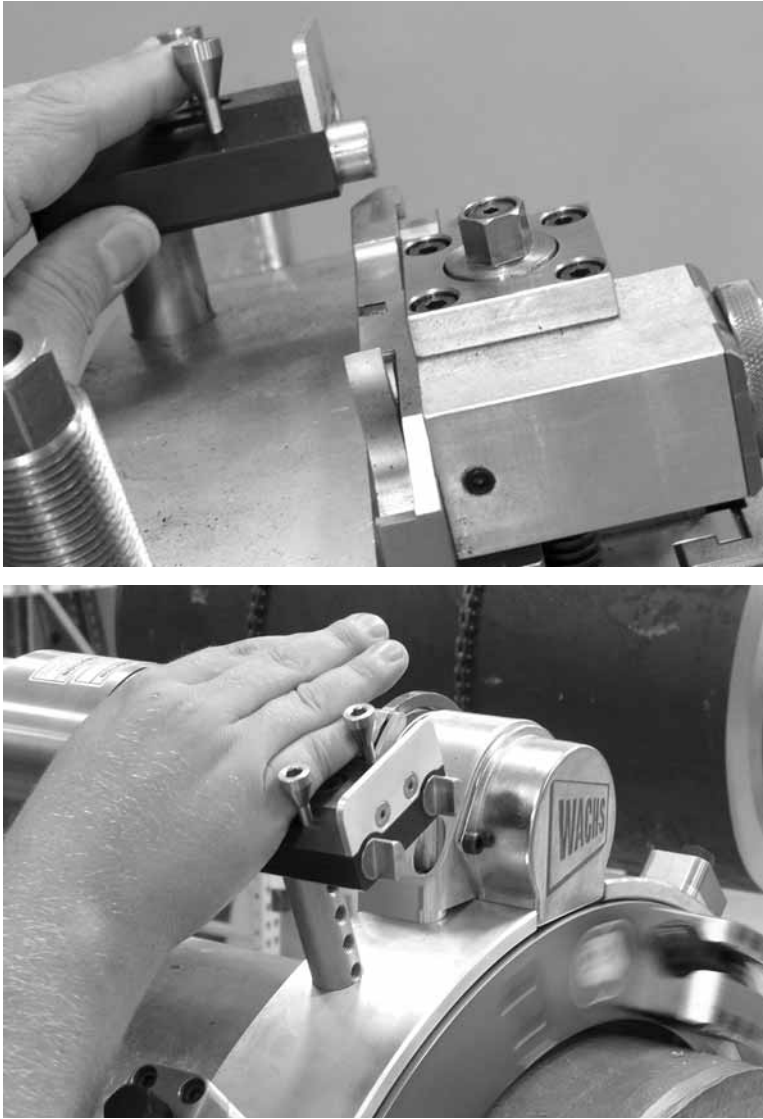


Figure 5-5. Push the trip knobs forward to engage the trips

- Top photo: One trip engaged.
- Bottom photo: Two trips engaged..

6. As you cut, monitor cutting performance. Adjust motor speed as necessary.
7. If the machine starts to bind or chatter, you can disengage the trips for a few rotations to allow chips to clear.
8. When the cut is close to complete, make sure you are clear of any fall-off pieces. Support the fall-off piece if necessary.
9. When the cut is complete, disengage the trips and operate the machine through one or more complete rotations to clean up the cut surface.
10. Shut off the drive motor and disconnect the power source.

- 11.** Disengage the feed knobs on the slides and use the rapid retract to retract them.
- 12.** Remove the slides from the machine.
- 13.** Remove the drive motor from the machine.
- 14.** Remove the machine from the workpiece. If the workpiece is open-ended, you can loosen the clamp legs and remove the entire ring from the workpiece.

Chapter 6

Operating with O.D. Tracking Slides

O.D. TRACKING SLIDE KIT

O.D. tracking slides are designed to track on the surface of out-of-round pipe. A spring-loaded tracking wheel travels on the pipe surface as the DynaPrep MDSF rotates. This keeps the cutting tool in contact with the pipe all around the O.D. at a continuous depth.

The O.D. tracking slides can be used with DynaPrep MDSF models from 12" to 60". One kit, part number 69-5204-01, is available for the full range of machine sizes. The kit comes in its own storage case. Figure 6-1 and Figure 6-2 show the components included in the O.D. tracking slide kit.

ITEM	PART NUMBER	QTY	DESCRIPTION
1	60-227-00	1	TOOL BOX
2	69-3041-00	4	TOE CLAMP ASSEMBLY, OD TRACKING
3	69-4201-00	1	CASE ASSEMBLY, O.D. TRACKING MDSF
4	69-4506-00	4	SCREW LEG EXTENSION ASSEMBLY
5	69-4604-01	2	MDSF O.D. TRACKING SLIDE ASSEMBLY
6	69-4744-01	1	TRIP ASSEMBLY, O.D. TRACKING 12"-60"
7	69-4801-00	4	EXTENSION LEG ASSEMBLY, 54"-60"
8	90-8000-00	1	WRENCH, 13MM OPEN/FLEX-END (NOT SHOWN)
9	90-8001-00	1	WRENCH, 19MM OPEN/FLEX-END (NOT SHOWN)

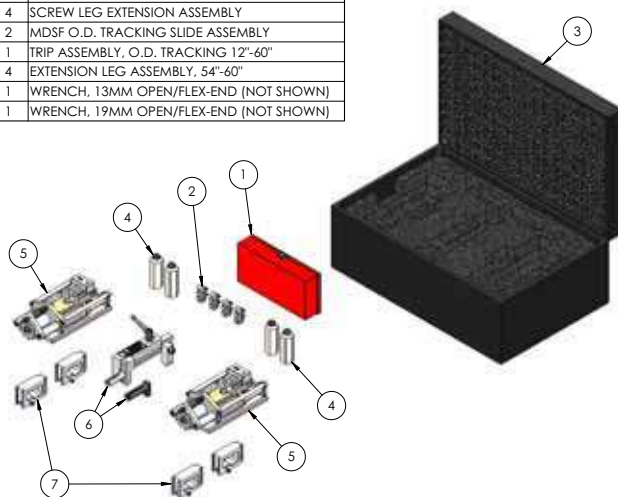


Figure 6-1. The O.D. tracking slide kit (69-5204-01) includes all components needed to use the DynaPrep MDSF for cutting out-of-round pipe.

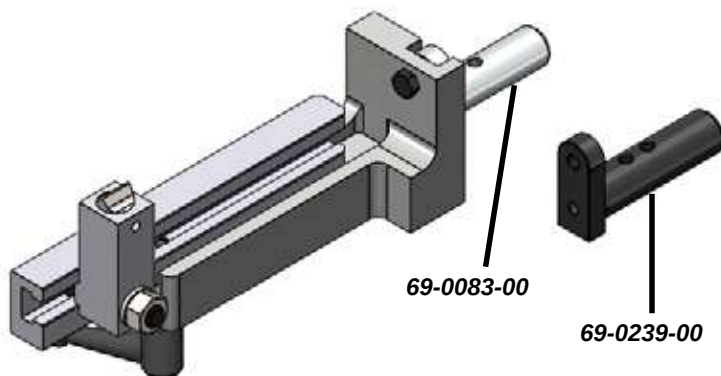


Figure 6-2. The O.D. tracking slide trip assembly (69-4744-01) includes two trip positioning bars.

- Use trip bar 69-0083-00 on DynaPrep MDSF sizes 12" to 24".
- Use trip bar 69-0239-00 on DynaPrep MDSF sizes 28" to 60".

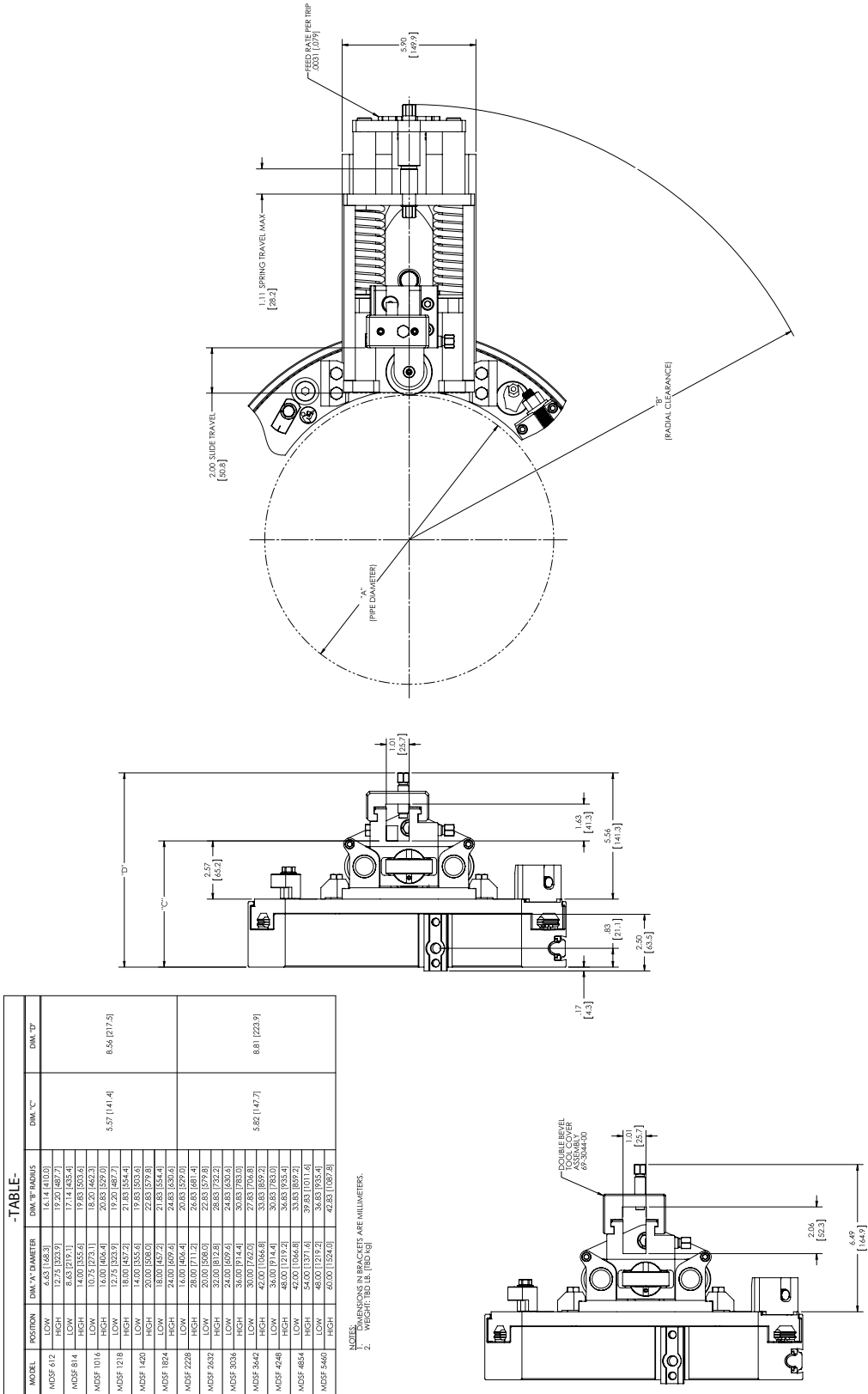


Figure 6-3. The drawing shows the operating dimensions of the slides for all machine sizes.

SETTING UP THE SLIDES

Offset Parting Setup

For parting (straight cutoff) operation, use a parting tool in each slide. Use the large spacer blocks to mount the tools at offset positions (one higher than the other), as described below.



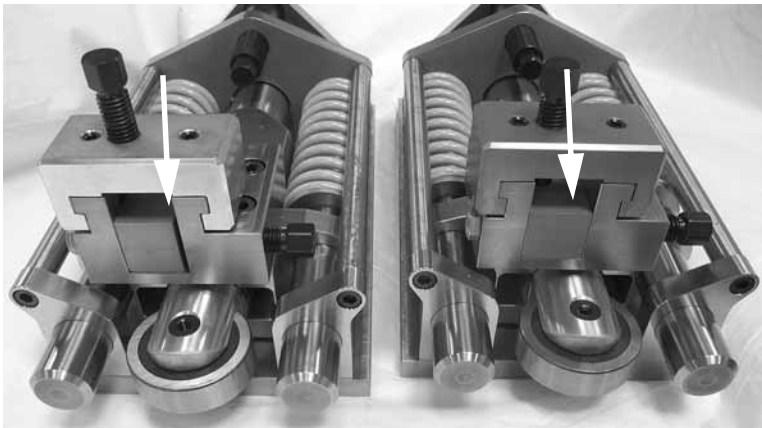
1. In the first slide, set the large spacer block into the tool holder in the **low** orientation (with no gap at the side of the block). Tighten the mounting screw into the spacer block.

Figure 6-4. Insert the spacer into the tool block in the required orientation, with the threaded hole aligned with the screw hole.



- 2.** Insert and tighten the screw to hold the spacer.

Figure 6-5.



- 3.** Set up the spacers so that one is in “high” position (left, with gap), and one is in “low” position.

- In “high” position, the **.92** engraving is visible.
- In “low” position, the **1.00** engraving is visible.

Figure 6-6.

- 4.** In each slide, install a parting tool on top of the spacer block.
- 5.** Tighten the screw in the tool cover. You will adjust the tool position after mounting the slide to the machine.
- 6.** Turn the starwheel on both slides clockwise to fully retract the slide.

Parting-Beveling Setup

For parting and beveling, use a parting tool in one slide and a beveling tool in the other slide. Either slide can be used for parting or beveling.



1. Insert the spacer into the tool block in the “low” orientation, with the threaded hole aligned with the screw hole.

- In “low” position, the **1.00** engraving is visible.
- Insert and tighten the screw to hold the spacer.
- On the other slide, leave the tool holder **without** a spacer.

Figure 6-7.

2. Install a parting tool on top of the spacer block. Install the tool cover by sliding it over the tool holder. Tighten the screw in the tool cover.
3. In the second slide, insert a beveling tool. Tighten the screw on the back side of the tool holder to secure the beveling tool.
4. If you are cutting a pipeline application, stack a parting tool on top of the bevel tool.
5. Turn the starwheel on both slides clockwise to fully retract the slide.

MOUNTING THE SLIDES ON THE DYNAPREP MDSF

MDSF Position

For the standard tooling configuration (with one of the parting tools mounted with the 0.92” spacer block), position the MDSF on the pipe so that the top surface of the rotating ring is 3.5” from the cut line.

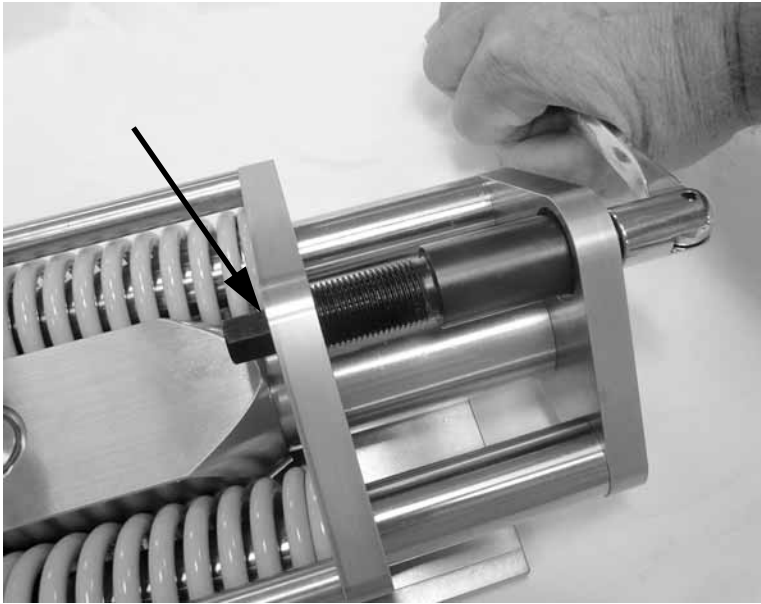
See the envelope drawing in this chapter on page 63, and the setup instructions in Chapter 4.

Mounting the Slides



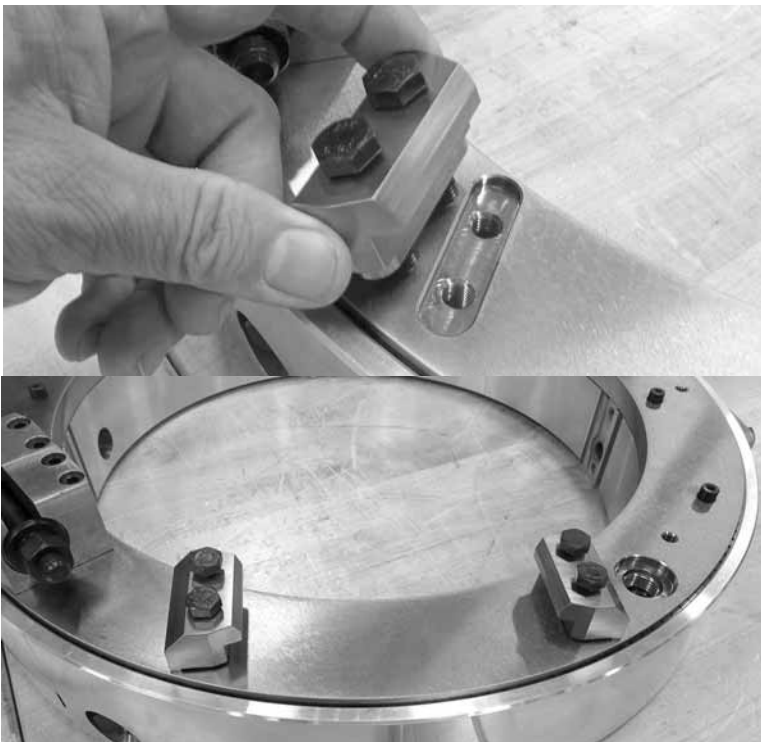
NOTE

Make sure the slides are fully retracted before mounting them. See “Setting up the Slides” on page 64.



1. On both slides, turn the jacking screw counter-clockwise until the end plate just reaches the end of the threads.

Figure 6-8.



2. Mount the DynaPrep MDSF on the pipe as instructed in Chapter 4.
 - The photos in this section show the machine on a workbench. The machine should be mounted on the pipe before you mount the slides to it.
3. Insert the mounting blocks on the rotating ring as shown.
 - Leave the screws in the brackets loose so that you can mount the slides.

Figure 6-9.



4. Slide the base plate of the slide beneath the mounting brackets.

Figure 6-10.



5. Push the slide forward until the tracking wheel is against the pipe, then snug down the screws tightly enough to hold the slides in place.

- Set both slides with the tracking wheels against the pipe.

Figure 6-11.

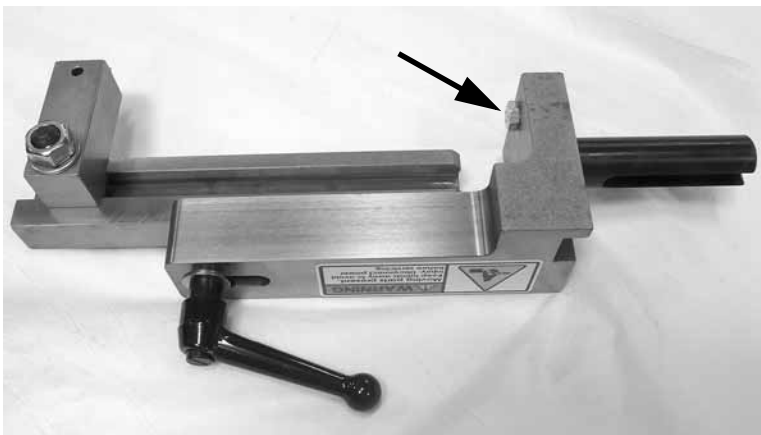
6. Operate the DynaPrep MDSF slowly through one complete rotation. As the tracking wheel on each slide travels over the surface of the pipe, it will push the slide back so that it is in position to contact the pipe at the high point (the location where the clearance is least).
7. Securely tighten the screws in the slide mounting blocks to hold the slides in position.
8. Turn the jacking nuts on both slides clockwise all the way to release the springs for operation. The tracking wheels will be against the pipe.
9. Loosen the tool set screws in both slides, and move the tools forward until they are about 1/16" from the pipe. Tighten the set screws.

MOUNTING AND CONFIGURING THE TRIP



- 1.** Set up the trip assembly with the correct trip positioning bar for the machine size.
 - Use trip bar 69-0083-00 on DynaPrep MDSF sizes 12" to 24".
 - Remove the screw to change the trip bar.

Figure 6-12.



- Use trip bar 69-0239-00 on DynaPrep MDSF sizes 28" to 60".

Figure 6-13.

- 2.** Mount the trip assembly to the mounting location on the stationary ring.
- 3.** Loosen the trip lock lever, and push the trip all the way in against the machine. Tighten the trip lock lever.
- 4.** Using the drive motor, rotate the frame to position one of the starwheels over the trip assembly.
- 5.** Loosen the trip adjustment knob, and slide the trip toward or away from the frame to position it beneath the starwheel. Tighten the trip adjustment knob.
- 6.** Loosen the trip lock lever to release the slide to the disengaged position. (The slide is spring-loaded and will disengage when the lever is loosened.)
- 7.** Tighten the trip lock lever. Leave the trip disengaged until you are performing the cut.

Double-Trip Setup

You can use two trips to double the feed rate. Install a second trip at the opposite location on the stationary ring, and configure it as described above.

OPERATING THE DYNAPREP MDSF

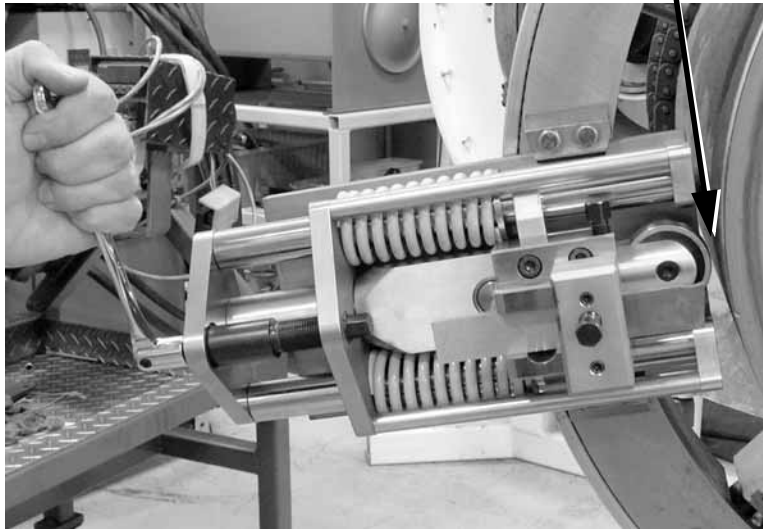
See Chapter 4 for instructions on mounting the drive motor to the machine.

Read Chapter 2, “Safety”, and be familiar with all safe operating guidelines before operating the DynaPrep MDSF.

- 1.** Connect the power source to the drive motor: air, hydraulic, or electric.
- 2.** Using a wrench on the starwheels, feed the slides to position the tools close to the work-piece.
- 3.** Make sure the trips are in the disengaged position. Set the motor control to the slowest speed, and operate the DynaPrep MDSF slowly through one rotation while checking for clearance.
- 4.** Set the motor control to the desired operating speed. Start the machine.
- 5.** Engage the trip.
- 6.** As you cut, monitor cutting performance. Adjust motor speed as necessary.
- 7.** If the machine starts to bind or chatter, you can disengage the trips for a few rotations to allow chips to clear.
- 8.** When the cut is close to complete, make sure you are clear of any fall-off pieces. Support the fall-off piece if necessary.
- 9.** When the cut is complete, disengage the trip and operate the machine through one or more complete rotations to clean up the cut surface.
- 10.** Shut off the drive motor and disconnect the power source.

Removing the Slides from the MDSF

It is critical that you follow the steps in this procedure to remove the slides. Failure to perform these steps in order could cause the slides to move unexpectedly because of spring tension. Serious injury or damage to the equipment could result.



Turn jacking screw until you can see a gap between the tracking wheel and the pipe surface

1. Turn the starwheels on both slides clockwise to retract the slides.
2. Turn the jacking screws on both slides counter-clockwise to compress the springs until there is a gap between the pipe surface and the tracking wheels.



WARNING

Do not loosen the mounting block screws or try to remove the slides when the tracking wheels are under spring pressure against the pipe. The spring pressure will “pop” the slide away from the pipe. Serious injury or damage to the equipment can result.



3. Loosen the screws in the mounting blocks to remove the slides from the machine.

- ***Before loosening the screws, make sure the springs are compressed and there is a gap between the tracking wheel and the pipe.***
- ***If necessary, hold the slides to keep them from falling when you loosen the screws.***

- 4.** Remove the mounting blocks from the rotating ring.
- 5.** Remove the trip assembly from the machine.
- 6.** Remove the drive motor from the machine.
- 7.** Remove the machine from the workpiece. If the workpiece is open-ended, you can loosen the clamp legs and remove the entire ring from the workpiece.

Chapter 7

Operating with a Counterbore Slide

COUNTERBORE SLIDES

Two counterbore slides are available with the DynaPrep MDSF:

- 3" stroke (69-4605-00)
- 6" stroke (69-4606-00).

The operating procedure is the same for both. The only difference is the length of stroke and maximum counterbore depth.

The counterbore slide has a manual feed handle to feed the tool axially into the I.D. of the pipe. Operate the DynaPrep MDSF in the normal direction, with the trip(s) removed from the machine. (Removing the trips completely, rather than disabling them, is recommended for safer operation.) Use the manual feed knob on the standard slide to set the radial position for each pass of the counterbore cut.

Figure 7-1 illustrates the components of the 3" counterbore slide. The 6" slide is identical except for the length of the bar assembly.

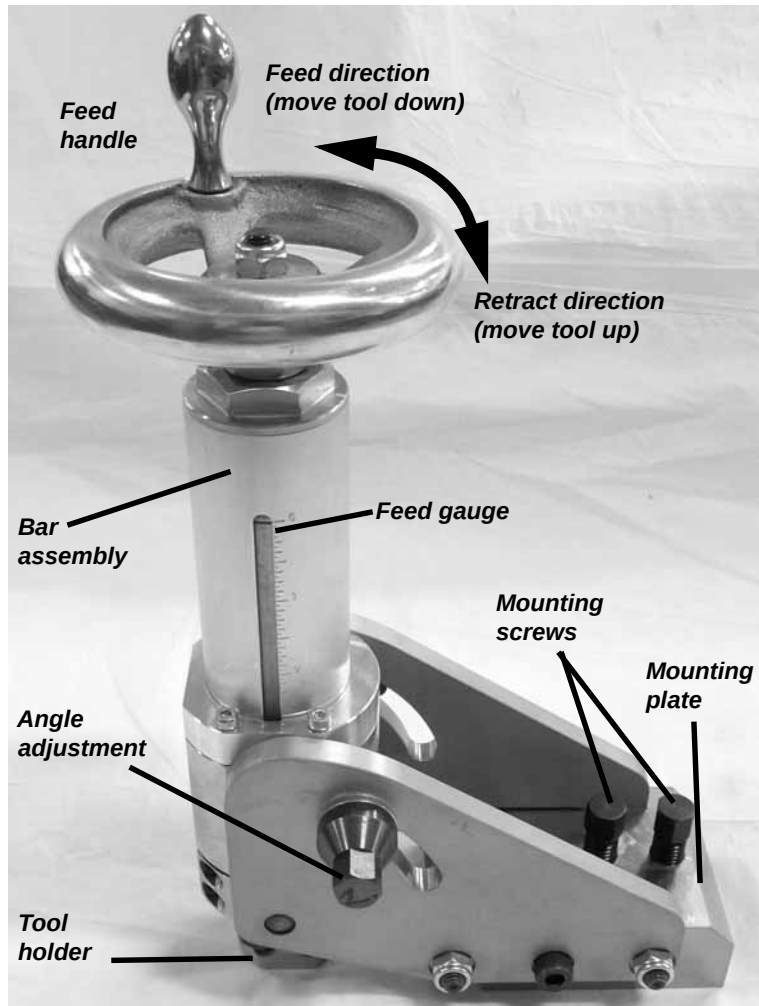


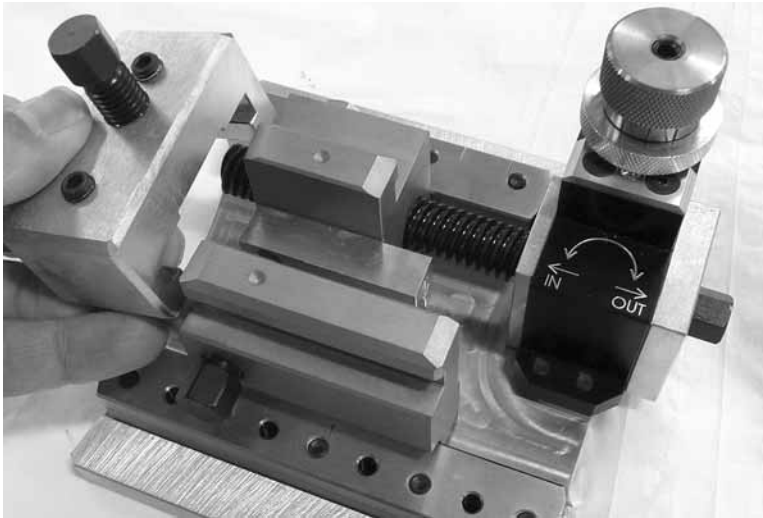
Figure 7-1. The photo shows the components of the counterbore slide.

- The picture shows the 3" counterbore slide. The 6" slide is the same except for the height of the bar assembly.
- To perform the counterbore cut, turn the feed handle counter-clockwise as the DynaPrep MDSF rotates.
- Loosen the angle adjustment screw to tip the bar assembly to the desired angle. (Angle gauge on opposite side.)
- Use the red line on the feed gauge to measure depth of cut.
- The mounting plate attaches to the standard slide tool holder. Tighten the mounting screws to secure the counterbore slide to the standard slide.

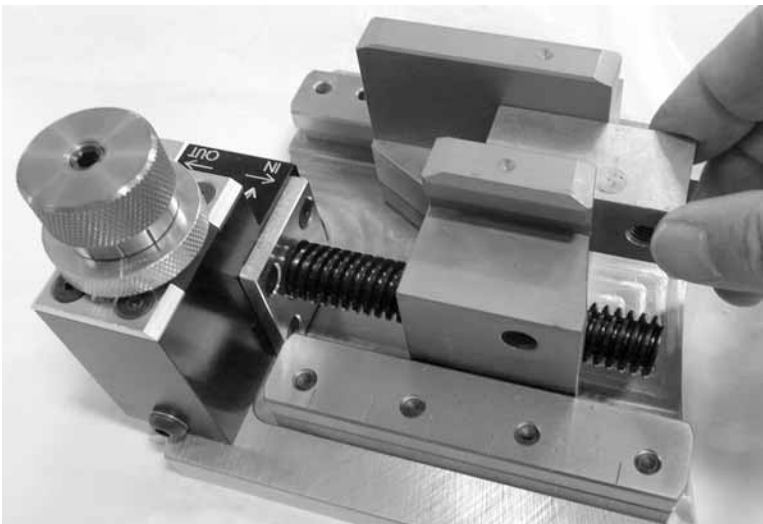
PERFORMING THE COUNTERBORE

The counterbore slide mounts to the tool holder on any of the standard slides. Use the following guidelines for operation.

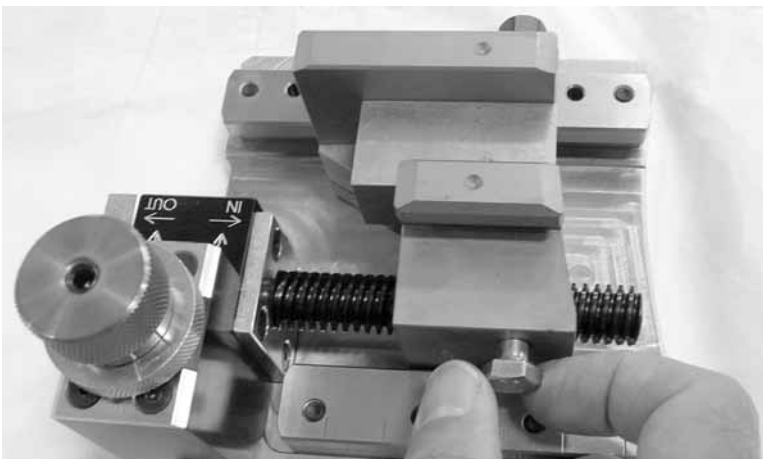
1. After performing the parting or parting/beveling operation, leave the DynaPrep MDSF mounted at the same location on the pipe. The counterbore slide is designed to operate with the machine at the cut line position.
2. Turn the feed handle on the counterbore slide clockwise to retract the slide upward to the end of travel. See the gauge on the slide.
3. Remove one of the standard slides from the rotating ring. Leave the other slide mounted.
4. Remove the trip assembly from the machine.



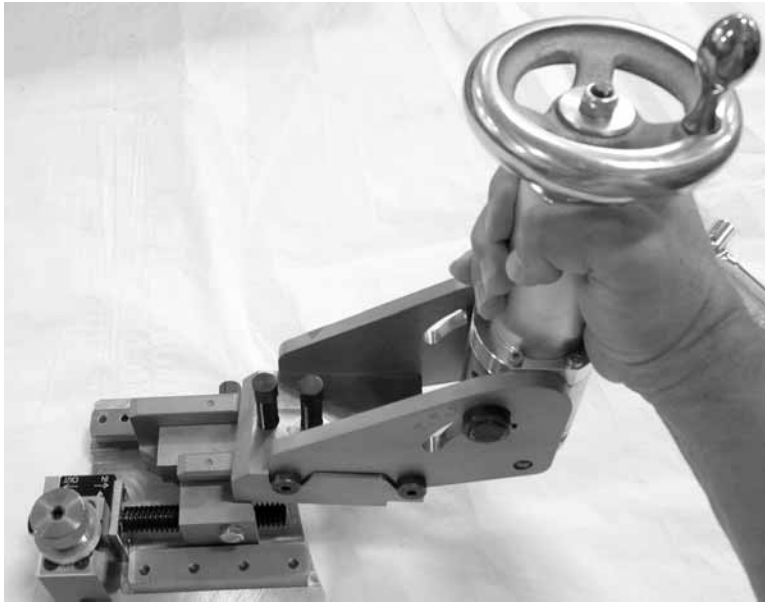
- 5.** Remove the tool cover to mount the counterbore slide on the standard slide tool holder.
- Slide the tool cover off the tool holder.



- 6.** Install the 1" spacer block in the tool holder of the standard slide.
- Insert the screw through the tool holder and tighten it into the spacer block.

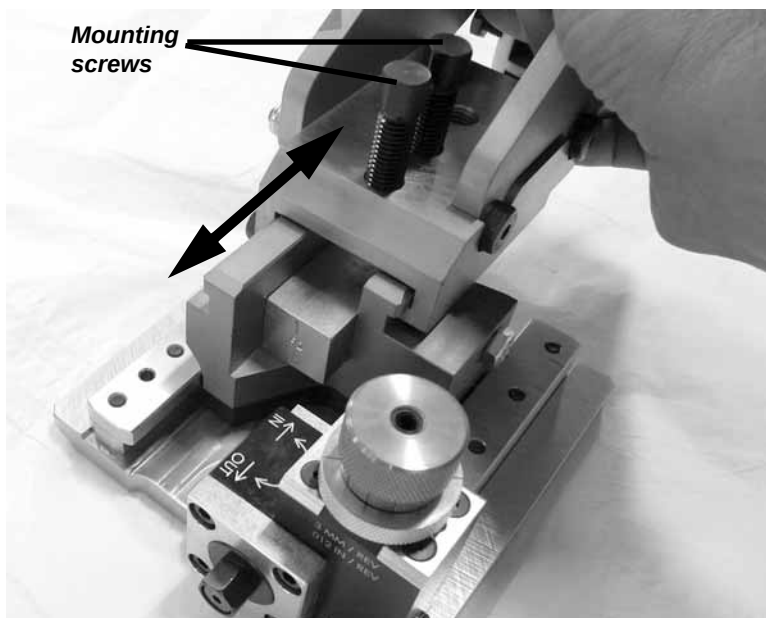


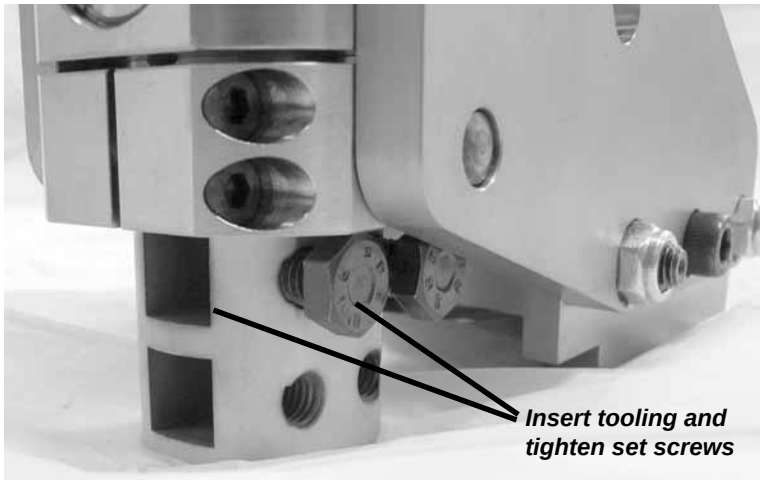
- 7.** Disengage the feed on the standard slide, and use the rapid retract nut to advance it to the forward position (toward the center of the pipe). See instructions in Chapter 5.



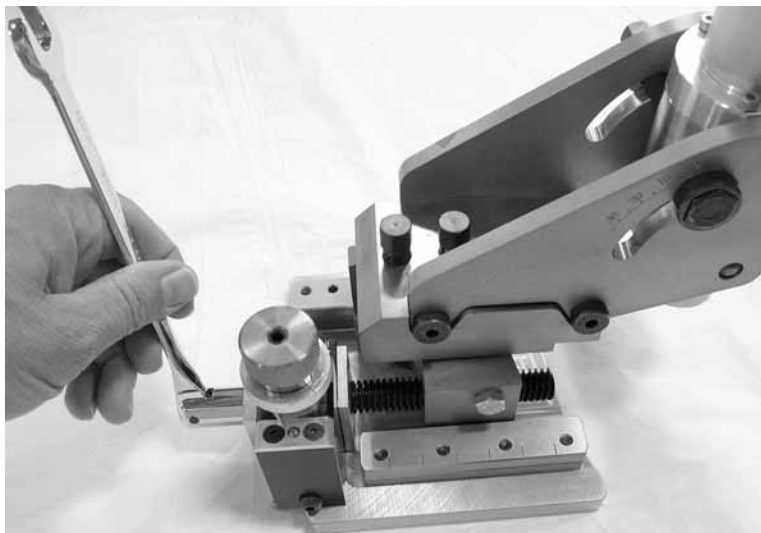
- 8.** Mount the counterbore slide onto the tool holder on the standard slide.

- You can move the counterbore back and forth to position it anywhere on the tool holder.
- 2 mounting screws are provided; insert them in the appropriate holes for the location of the counterbore slide and tighten them against the 1" spacer block.





- 9.** Insert the required tooling in the counterbore slide tool holder.



- 10.** Use the rapid retract nut (or engage the feed and use the manual feed knob) to set the axial position of the counterbore slide.
- *If necessary, loosen the 2 mounting screws and move the slide position on the tool holder of the standard slide.*

- 11.** Use the feed handle on the counterbore slide to position the tool at the starting location on the pipe.
- 12.** Engage the feed on the standard slide before operating the counterbore slide. This will prevent the slide from moving radially during operation.
- 13.** Attach the drive motor and operate the DynaPrep MDSF in the forward (clockwise) direction. As the machine rotates, turn the feed handle on the counterbore slide to perform the cut.
- 14.** When the required counterbore depth is reached, stop the machine and retract the counterbore slide.
- 15.** Depending on the diameter of the counterbore, you may need to perform multiple passes. Retract the tool out of the pipe and use the manual feed knob on the standard slide to position the counterbore slide for the next pass.

Chapter 8

Operating with the Bridge Slide

BRIDGE SLIDE APPLICATIONS

The bridge slide accessory is used for facing, counterboring, and beveling a pipe end surface. This chapter describes setting up the DynaPrep MDSF and mounting the bridge slide to it. For instructions on machining with the bridge slide, refer to the instructions in the *Bridge Slide Single-Point Accessory User's Manual*.

Bridge slides are available for DynaPrep MDSF models from 12" to 48". Table lists the bridge slide used with each DynaPrep MDSF. The bridge slide adapter kit (69-5300-00) includes all components required to fit the bridge slide to the DynaPrep MDSF.

Table 1: MDSF Models and Bridge Slides

MDSF Model	Bridge Slide Model(s)	Top Subplate Used
612	60-428-14, 60-428-16, 60-428-20	69-0202-00
814	60-428-16, 60-428-20	69-0202-00
1016	60-428-20	69-0202-00
1218	60-428-20	69-0202-00
	60-428-24	69-0201-00
1420	60-428-24	69-0201-00
1824	60-428-24, 60-428-28	69-0201-00
2228	60-428-28, 60-428-32	69-0201-00
2632	60-428-32, 60-428-36	69-0201-00
3036	60-428-36	69-0201-00
3642	60-428-42	69-0201-00
4248	60-428-42, 60-428-48	69-0201-00

The bridge slide attaches to the DynaPrep MDSF machine and “bridges” the end of the pipe. The tool mount has two axes of motion:

- An axial positioning drive for setting the tool depth into the face of the pipe. This drive is manually operated, using a hand knob.

- A feed drive that feeds the tool radially in toward the center of the pipe. The drive uses a star-wheel and trip to feed automatically as the DynaPrep MDSF rotates.

**NOTE**

To perform an operation feeding the slide out away from the center of the pipe (such as counterboring), disengage the trip and operate the slide manually using a wrench on the castle nut.

The bridge slide uses a single point tool and is available with beveling templates for various form contours.

The MDSF bridge slide adapter kit is shown in Figure 8-1. It includes components for mounting compatible bridge slides on MDSF models 612 through 4248.

ITEM	PART NUMBER	QTY	DESCRIPTION
1	69-0199-00	1	SUPPORT, BOTTOM
2	69-0200-00	1	SUBPLATE, BRIDGE SLIDE BOTTOM
3	69-0201-00	1	SUBPLATE, 24" BRIDGE SLIDE TOP
4	69-0202-00	1	SUBPLATE, BRIDGE SLIDE TOP "A"
5	69-0271-00	1	SPACER, TRIP-BRIDGE SLIDE
6	69-3046-00	1	DUAL TRIP ASSEMBLY
7	90-800-06	1	WRENCH, 5/64 - 1/4 HEX SET (NOT SHOWN)
8	90-800-63	1	WRENCH, 1/2 DRIVE RATCHET (NOT SHOWN)
9	90-800-76	1	3/8 HEX DRIVE (NOT SHOWN)

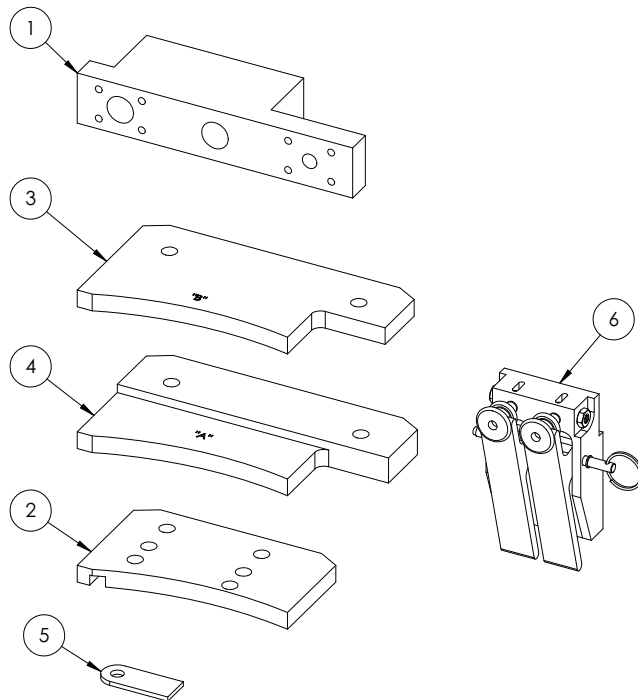


Figure 8-1. The photo shows the components of the MDSF bridge slide adapter kit.

- Use Top Subplate 69-0201-00 (Item 3) with bridge slides from 24" through 48".
- Use Top Subplate 69-0202-00 (Item 4) with bridge slides from 14" through 20".
- Remove the standard MDSF trip assembly, and mount the Dual Trip Assembly (Item 6) with the Bridge Slide Trip Spacer (Item 5).
- See the assembly diagram in the next section.

MOUNTING AND OPERATING THE BRIDGE SLIDE

1. If you have performed a cut-off using the MDSF, leave the machine mounted on the pipe at the same location.
2. If you are mounting the MDSF for bridge slide operation, set it up as described in Chapter 4.
3. Mount the bridge slide bottom subplate and bridge slide top subplate to the MDSF at the slide mounting positions, as illustrated in Figure 8-2.
4. Mount the bottom support to the bridge slide bottom subplate.
5. Mount the bridge slide to the adapters.

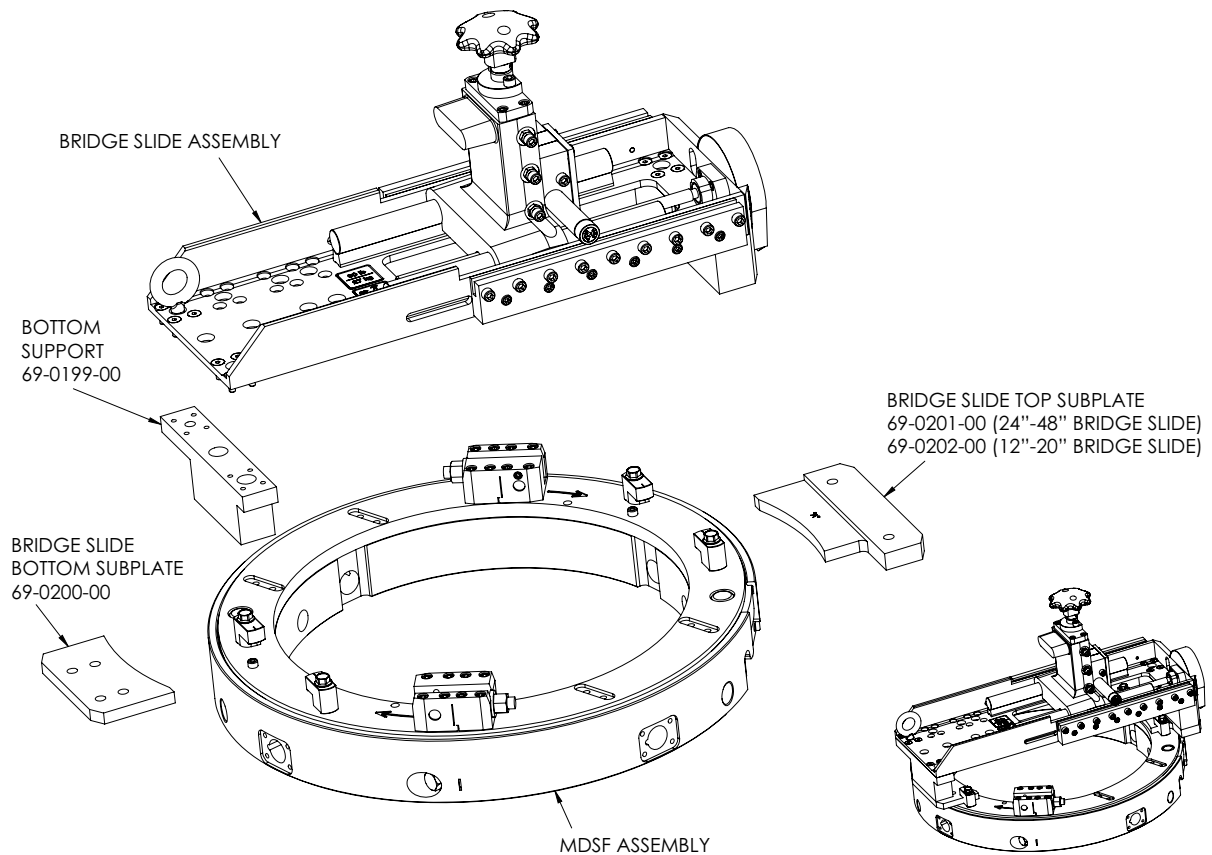


Figure 8-2. Mount the bridge slide to the MDSF as shown.

6. To operate the bridge slide, see the instructions in the *Bridge Slide Single Point Beveling Accessory User's Manual*.

Chapter 9

Preventive Maintenance

LUBRICATION

Slides

1. Lubricate the feed screws and slide rails on the slides every time you use the machine. Use a light oil; do not use grease.

Ring Assembly

1. Every 2 cuts, split the ring into halves and clean and lubricate inside the rotating and stationary rings.
 - Using a clean cloth, wipe out the raceway of the stationary ring to remove oil and dirt.
 - Wipe down the bearing surface of the rotating ring to remove oil and dirt.
 - Apply a few drops of way oil to the felt wipers in the stationary ring.

