ENERPAC

Operation and Maintenance Manual

Enerpac MITT Series
Mechanical Isolation & Test Tools

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⚠ To reduce the risk of injury, user must read and understand this document before use.

MITT SERIES MECHANICAL ISOLATION AND TEST TOOLS

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1.0 INTRODUCTION

Overview

The Enerpac™ Mechanical Isolation and Test Tool (MITT) is a dual purpose tool that provides a safe, reliable and cost-effective means for the localized isolation and pressure testing of piping. When installed and functioned properly, the MITT creates a positive vapor barrier to allow hot work to safely take place and verifies the integrity of a newly welded or formed joint through pressure testing.

⚠ WARNING The tool's isolation function is as a Vapour Barrier ONLY. Not to be used as a pressure plug.

There are two design types of the tool, single bolt and multi bolt, that cover a size range from ¾" to 40".

- Single bolt: ¾" to 2"
- Multi bolt: 3" to 40"

Custom tools and larger sizes are available upon request, but may follow a unique set of instructions.

This document will detail the safe installation and operation procedures required to be undertaken to ensure the correct and safe deployment of the MITT, in order to conduct localized isolation and weld testing.

⚠ WARNING Tools shall only be used by trained and competent personnel.

Delivery Instructions

Upon delivery, all components must be inspected for damage incurred during shipping. If damage is found, the carrier should be notified at once. Shipping damage is not covered by the Enerpac warranty.

Warranty

- Enerpac guarantees the product only for the purpose for which is intended.
- Refer to the Enerpac Global Warranty document for terms and conditions of the product warranty.

Any misuse or alteration invalidates the warranty.

- Observe all instructions as communicated in this manual.
- Modification to any part of the equipment outlined in this manual shall not be attempted, as it will invalidate the warranty and can lead to serious injury or death.
- When replacement parts are needed, use only genuine Enerpac replacement parts.

Part Replacement

Check the Repair Parts Sheet (RPS) section of this document, to order replacement parts when required.

2.0 SAFETY

Read all instructions carefully. Follow all recommended safety precautions to avoid personal injury as well as damage to the product and / or damage to other property. Enerpac cannot be responsible for any damage or injury from unsafe use, lack of maintenance, or incorrect operation. Do not remove warning labels, tags, or decals. In the event of any questions or concerns arising, contact Enerpac or a local Enerpac distributor for clarification.

If you have never been trained on high-pressure hydraulic safety, consult your distributor or service center for information about Enerpac Hydraulic Safety Courses.

This manual follows a system of safety alert symbols, signals, words, and safety messages to warn the user of specific hazards. Failure to comply with these warnings could result in death or serious personal injury, as well as damage to the equipment or other property

The Safety Alert Symbol appears throughout this manual. It is used to alert you to potential physical injury hazards. Pay close attention to Safety Alert Symbols and obey all safety messages that follow this symbol to avoid the possibility of death or serious injury.

Safety Alert Symbols are used in conjunction with certain Signal Words that call attention to safety messages or property damage messages and designate a degree or level of hazard seriousness. The Signal Words used in this manual are DANGER, WARNING, CAUTION, and NOTICE.

⚠ DANGER Indicates a hazardous situation that, if not avoided, will result in death or serious personal injury.

⚠ WARNING Indicates a hazardous situation that, if not avoided, could result in death or serious personal injury.

⚠ CAUTION Indicates a hazardous situation that, if not avoided, could result in minor or moderate personal injury.

NOTICE Indicates information considered important, but not hazard related (e.g. messages related to property damage). Please note that the Safety Alert Symbol will not be used with the signal word.

DO: an illustration showing how the tool should be used.

DON'T: an illustration showing an incorrect way to use a tool.

2.1 Safety Precautions

⚠ WARNING

Failure to observe and comply with the following precautions could result in death or serious personal injury. Property damage could also occur.

- Read and completely understand the safety precautions and instructions in this manual before operating the Mechanical Isolation and Test Tools or preparing them for use. Always follow all safety precautions and instructions, including those that are contained within the procedures of this manual.
- Tools are not rated to hold back pressure - never allow build up of pressure behind the tool, as this can result in the tool ejecting and causing serious bodily injury or death.
- Ensure all hydraulic components are rated to a minimum safe working pressure of 5,000 PSI.
- Do not overload equipment.
- Never exceed the safe maximum test pressure of the pipe to be tested.
- Wear personal protective gear when operating hydraulic equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid steel-toed safety shoes, hard hats, gloves or hearing protection (used as appropriate) will reduce personal injuries.
- Applying pressure to a damaged hose may cause it to rupture. Immediately replace worn or damaged parts. Use only genuine Enerpac parts from approved distributors or service centres. Enerpac parts have been engineered and manufactured to be fit-for-purpose.
- To minimise risk of personal injury keep hands and feet away from the tool and workplace after installation and torque operations are complete.
- Do not handle pressurised hoses; escaping medium under pressure can penetrate the skin, causing serious injury. Seek medical attention immediately if oil penetration is suspected.
- Only pressurize complete and fully connected hydraulic systems. Do not pressurize systems that contain unconnected couplers.
- Always remain out of the line of fire of the tool after installing the tool and actuating the seals.
- Always vent process vapors downwind at least 30 feet away to prevent risk of volatile atmosphere in the hot work zone.
- During isolations, pressure between seals must be verified/monitored regularly to ensure vapor barrier is still in place.
- During isolations, pressure upstream of tool must be verified / monitored constantly to ensure no pressure build up.
- Never attempt to connect or disconnect hoses while the system is pressurized.
- Be certain that all hose couplings are fully connected at both the pump and tool fittings before applying any hydraulic pressure. If the couplings are not fully connected, medium flow will be blocked, and the tool could be subjected to excessive hydraulic pressures. Catastrophic failure of tool could result.
- Never apply more hydraulic pressure to any tool, hose, fitting or accessory than the maximum allowable pressure as stated in the manufacturer's specifications. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system.
- Be sure the operator has completed safety induction training, specific to the work surroundings. The operator should be thoroughly familiar with the controls and the proper use of the tool.
- The operator must be of at least the minimum age required by applicable local regulations, laws and the facility standard operating procedures.
- Never strike the tool while it is pressurized or under load. Components under pressure may become dislodged, allowing them to become dangerous projectiles. Dislodged tools may result in loss of seal / isolation and cause flammable or volatile conditions.
- Avoid striking the tool at any time, even when it is not pressurized or under load. Striking the tool could cause permanent damage to components.

⚠ CAUTION

Failure to observe and comply with the following precautions could result in minor or moderate personal injury. Property damage could also occur.

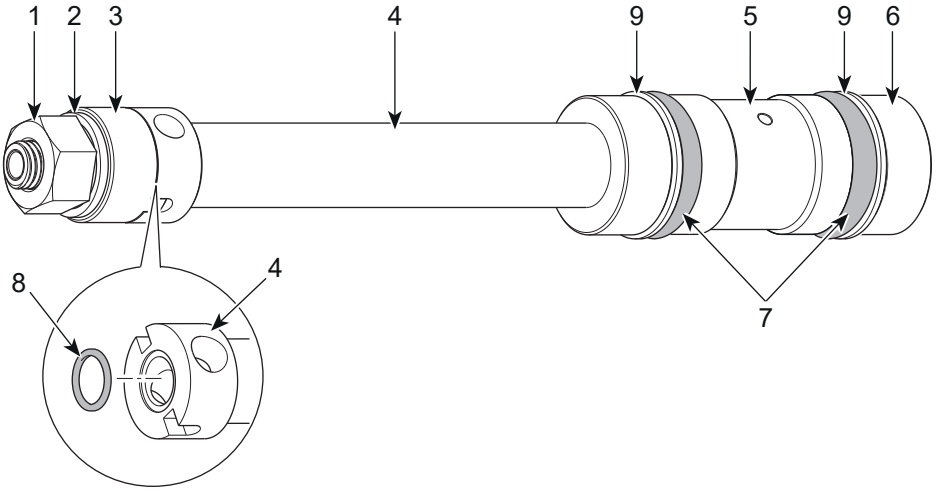
- Inspect all ports, ensure they are clean and free from obstruction.
- Ensure components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges and corrosive chemicals.
- Take care to avoid sharp bends and kinks in hydraulic hoses. Bends and kinks can cause severe back-up pressure and cause hose failure. Protect hoses from dropped objects; as a sharp impact may cause internal damage to hose wire strands. Protect hoses from crush risks, such as heavy objects or vehicles; crush damage can cause hose failure.
- Do not lift equipment by the hoses or couplers. Use only the designated carrying handles.

NOTICE

- Equipment must only be serviced by a qualified technician. For repair service, contact the Enerpac Authorized Service Centre in your area.
- Rope off working area and place warning signs.
- Hot surfaces can be a major source of ignition. Enerpac has designed and constructed the MITT series tools to minimize the possibility of an incendiary spark that may be caused by the impact of aluminium components with corroded steel. However, to reduce the chance of an incendiary spark, use of the tools with corroded steel structures or components should be avoided whenever possible. Be especially careful to avoid accidental impacts with the tools and corroded steel.

3.0 FEATURES AND COMPONENTS

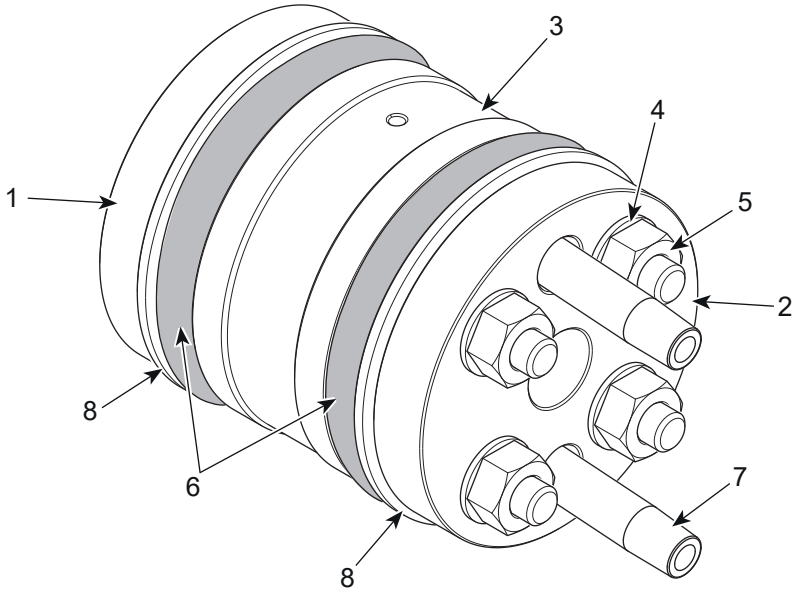
3.1 Single Bolt Configuration



Key:
1. Nut
2. Washer
3. Collar
4. Spacer
5. Annular Ring
6. Mandrel
7. Seal Set
8. Internal Seal
9. Backing Rings

Figure 1: Single Bolt Component Overview (Patent pending)

3.2 Multi-Bolt Configuration



Key:
1. Back Plate
2. Front Plate
3. Annular Ring
4. Washer
5. Nut
6. Seal Set
7. Pipe
8. Backing Rings

Figure 2: Multi-Bolt Component Overview (Patent pending)

4.0 PREPARATION

4.1 Pre-Job Considerations

MITT components / assemblies may require lifting. Ensure that there is adequate lifting equipment, accessories and competent personnel to perform the task.

All lines to be worked on should be blinded and vented before any work begins. Lines must be depressurized and monitored for pressure build up with a low pressure gauge (0-15 psi recommended) prior to beginning work.

It is recommended that primary blinding/blocks/ isolations are of the double block and bleed type.

⚠ WARNING At no time should any person be allowed to stand in the line of fire (open end of the pipe) while the tool is installed in the line.

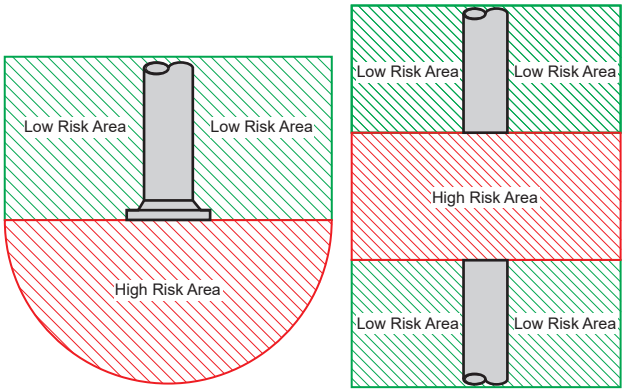


Figure 3: Line of Fire Risk Areas

⚠ WARNING Once installed in a line, the tool shall be monitored continually to assure no pressure build up occurs behind the tool. Never leave a tool installed in a line unattended while hot work is taking place in the immediate job area.

Weld beads should be ground down to meet piping specifications and piping edges must be deburred to prevent seal damage as excessive weld beads may prevent the tool from successful insertion in the pipe.

Prior to installation of the MITT tool, the immediate installation area – including where the seals will land – must be cleaned of any residual product, scaling or corrosion.

4.2 Tool Preparation

4.2.1 Tool and Seal Selection

Select the appropriate tool to match the pipe diameter and wall thickness as measured on location. Select seals and seal backing rings (as needed) appropriate to the pipe schedule and test pressure required. Refer to Appendix A: Tool Standard Pressure Guide for selection.

Ensure the seal matches the tool size specification.

Before use, the seals and tool must be visually inspected for any significant wear, damage, or issues with bonding.

It is recommended that an extra set of seals is available for replacement as needed. Seal longevity is dependent on test pressures, extrusion gap and pipe conditions but may typically last between 5 and 10 uses.

Reference Appendix A: Tool Standard Pressure Guide for tool / seal compatibility.

4.2.2 Gauge Selection

Adequately ranged pressure gauges are required for the proper function of each port of the MITT during isolations and pressure tests. Refer to the Operation sections for appropriate gauge selection for each function (5.1 for isolations and 5.2 for pressure testing).

4.2.3 Fittings

Selected fittings must be rated to the max pressure capability of the pump being used.

⚠ CAUTION Through-port vents are to remain as threaded connections ONLY. Quick-disconnect fittings of any type or style are NOT permitted to be used on any through-port vent connections.

4.2.4 Lubricating studs / washers

Lubricating the studs and washers helps to transmit the torque load to the seals. See below guidance for lubricating the stud and washer. Section 8 provides both lubricated and unlubricated torque values.

⚠ CAUTION Caution must be taken to ensure the lubricant does not come into contact with the seals or tube ID. Failure to properly apply the lubricant on the shaft threads and washers may cause incomplete torque transmittal resulting in decreased pressure holding capacity.

- Single bolt tool

Liberally spread lubricant over both sides of the washer and on the threads of the stud shaft.

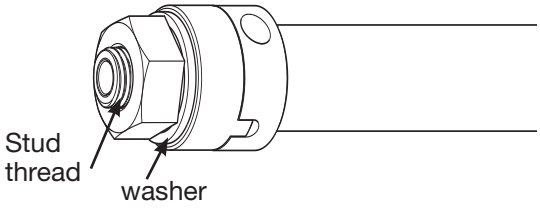


Figure 4: Single bolt tool

- Multi bolt tool

Liberally spread lubricant over both sides of all washers and on the threads of all stud shafts.

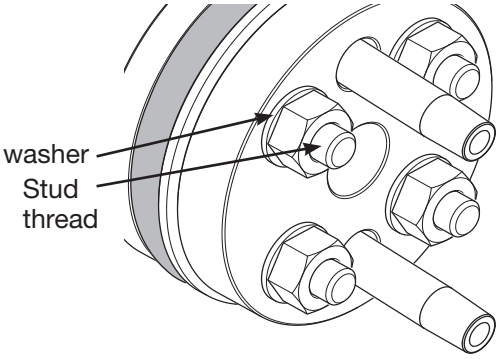


Figure 5: Multi Bolt Tool

5.0 OPERATION

Enerpac's In-line Weld Test Tools feature double block and bleed isolation. Once set in position these tools provide a verified vapor barrier allowing hot work activities to take place safely on-site. To test the weld the same tool is repositioned over the weld area. The weld test is typically undertaken using water as the test medium, but can be undertaken using inert gas where necessary.

MITT tools are actuated by applying torque to a single fastener or multiple fasteners. Each style and size requires different torque values and torqueing patterns. The proper torque values shall be used for each tool and can be found in Appendix A: Tool Standard Pressure Guide.

Gauges must be selected properly to ensure safe isolations.

- 0-100 PSI gauges shall be utilized to test/monitor the integrity of the seals during positive pressure isolations.
- 0-30 PSI, or lower, gauges installed on through-port vent ports for the purpose of monitoring for pressure build-up behind the MITT.

Prior to beginning work, ensure all tools and accessories have been tested and/or calibrated and have valid test/calibration labels.

Ensure each MITT has the proper fittings for each port to mate with the ancillary equipment to be used during operation.

During operation only use clean filtered water.

5.1 Isolations

To perform hydrodynamic isolations, MITT tools are designed to be placed in piping upstream from the area in which you want to perform any form of hot work. The device seals and blocks one portion of the pipe from the other, therefore isolating and containing the work area from the rest of the piping system.

NOTICE MITT tools are NOT to be used as a primary means of creating an isolation point.

The devices have through-ports that are to remain open for upstream gas and pressure monitoring. The purpose of this port is to monitor upstream gas or pressure.

A hydrodynamic isolation requires the supply of a continuous flow through the tool to dissipate the heat from welding or stress relieving. The following shall identify the basic steps required to accomplish a hydrodynamic application of the Enerpac™ Isolation Tool:

Note: Custom 3/4" - 4" hydrodynamic capable tools can be ordered from Enerpac™.

5.1.1 Installation for Isolations

1. Install correctly chosen seals and seal backing rings (if required) as per figures 1 and 2.
2. For isolations / vapor barriers, steel hard line extensions shall be connected directly to the MITT to transition past the heat affected zone due to temperature limitations of flexible hose extensions and better protect the lines against potential abrasions. Flexible hoses can be connected to the hard lines once past the heat affected zone.
3. Insert and position the tool in the pipe as far as possible from the hot work area to ensure minimal heat exposure to the seals – must be a minimum of 6 inches, although 12 inches is recommended.
4. Ensure fill and vent fittings are positioned 6 o'clock and 12 o'clock respectively to allow the test medium to properly fill the tool cavity and bleed off air.
5. Torque the tool nuts to compress the seals until initial contact is made with the piping internal diameter
   - For single bolt tools, tighten using a cresent wrench. Tighten the nut until the tool is stationary and a seal is achieved. Care must be taken not to exceed the max torque value specified in Section 8 of this manual. The nut must always be accessible.
   - For single bolt tools, the tool shall be held as concentric to the pipe as possible during torqueing operation to aid correct seating of seals.
   - For multi-bolt tool systems, a torque wrench may be used to tighten the compression nuts to the ASME PCC-1 Alternate Assembly Pattern #3.
6. Connect all the hoses and accessories as per Figure 6 except for the isolation gauge. Fill the tool until the test medium begins to seep out of the upper fitting. Attach the isolation gauge.
7. If necessary torque the nuts to the value as detailed in Section 8 following ASME PCC-1 Alternate Assembly Pattern #3
8. Pressurize the tool and close the inlet valve to verify hydrostatic seal can be maintained to the required pressure. Recommended minimum of 50 PSI be held for duration of installation.
9. Attach pipe assembly, vent hose and low pressure gauge to the through-port, per figure 4. All threaded connections shall be wrapped with Teflon tape. Route the attached vent hose a minimum of 30 feet, downwind of the work area in a safe location. Be mindful of any other potential ignition sources when routing the vent hose.

   The vent port shall:
   - Have only approved hoses or fittings connected to it
   - Have all approved hoses or fittings arranged such that inline vapors are always vented to a safe distance and location away from the isolation point
   - Have an inline gauge connected to allow continuous pressure monitoring, see figure 6.

   The vent port shall not:
   - Be blocked off by any means
   - Be modified in any way
   - Be blocked by debris
   - Have any connections that do not allow vapor to vent properly to a safe distance and location away from the isolation point
   - Ever be used as a port to introduce pressure behind the tool

   Should the vent port be blocked by debris, the debris shall be cleared in a manner so as to not

damage the threads.

Should the threads be damaged in any way, the tool shall not be used.

Once the seal has been proven hydrostatically, connect a supply hose to the inlet (lower) fitting on the Enerpac™ MITT and open the inlet valve.

⚠ WARNING Quick disconnect connections are NOT permissible for any portion of the through-port monitor assembly.

NOTICE For multi-bolt hydrodynamic isolations the front of the MITT must be packed with insulation to protect from radiant heat for any heat treatment processes. Improper shielding may result in tool and seal damage potentially catastrophic to the function of the isolation/vapor barrier.

10. Open the discharge valve sufficiently to establish a flow through the Isolation Tool while maintaining a pressure within the Tool cavity (monitored at the inlet).
11. The flow through the Tool will need to be enough to prevent overheating of the Seal. Discharge flow from the Tool should be no more than warm to the touch.
12. Both inlet and outlet pressures must be monitored. A decrease in the outlet pressure and flow without a corresponding decrease in the inlet pressure can indicate a problem with the seals.

⚠ CAUTION At no time should the isolation installer(s) or any other personnel perform hot work without a gas test and without authorization from the installer.

5.1.2 Reactivate an Unattended Isolation

⚠ WARNING An isolation shall never be left unattended, but in the event that a technician must approach an unattended isolation, the following steps shall be followed:

1. Installing technician to request a gas test prior to entering the area.
2. Installing Technician to visually inspect Enerpac Isolation gauges and seal for condition.
3. Seals must be reverified, as per section 5.1.1, step 8.
4. Adjustments to the Tool are to be made until a new isolation seal is proven.
5. The Isolation Installer will notify the customer representative that it is safe to begin hot work in the area. They will monitor the isolation while work is in progress and until the work has been stopped or has been completed.

5.1.3 Monitoring Isolations

To monitor the isolation while work is being performed, ensure the following:

- While the tool is installed, at no time can parts (vent gauges or hoses) be removed. Welders and Pipe fitters may request to have the venting apparatus temporarily removed so that they can perform their work and have easier access to the work. This practice is strictly forbidden.

NOTICE Constant monitoring is required to ensure there is no back pressure build -up.

⚠ DANGER Removing the venting assembly negates the use of the MITT as an isolation / vapor barrier and likely creates a volatile and/or flammable atmosphere.

- Only trained installers are authorized to monitor isolation.
- No hot work can be performed in the affected area unless isolation tool seal is checked and monitoring of Isolation Tool gauges occurs.
- Loss of pressure shown on the pressure gauge represents one seal has failed. Work is to be stopped immediately until the Isolation seal is re-checked and proven.
- Increase of pressure shown on the pressure gauge represents an increase of temperature of the pipe. If pressure is increased too high, it is possible one of the seals may leak. Reduce the pressure to maintain a pressure between 20-50psi.
- Pressure increase on vent gauge represents a build-up of upstream pressure / product behind the Isolation Tool. Work is to stop immediately, and area cleared until upstream pressure is reduced to acceptable levels, prior to continuing work in the area.
- At NO TIME shall any personnel be standing or monitoring gauges directly in front of the isolation tool. All workers are to remain off to the side and out of the “LINE OF FIRE.”
- When an Isolation Tool is left unattended, a warning sign MUST be placed in the area to alert any personnel that a Enerpac™ MITT is in place.
- Once the weld has been completed and cooled down, the isolation can be removed.

5.1.4 Removal of an Isolation

1. Notify operations that an isolation needs to be removed

⚠ DANGER Verify that there is no back pressure or product behind the tool

⚠ DANGER Prior removal of any equipment, ensure that a representative from the safety department is present with a gas monitor to monitor for any flammable/noxious gases during the subsequent steps.

2. Loosen and remove the vent gauge, vent hose, and vent pipe.
3. Bleed off the pressure from the annulus.
4. Remove the inlet and outlet hoses.
5. Gradually loosen nuts evenly to prevent stud overload/damage. After several passes on loosening the studs, the tool will gain clearance from the pipe and can be removed. If needed, use a twisting motion while pulling to aid in removal.

5.2 Pressure Testing

Mechanical Isolation & Test Tools are designed to be installed into the pipe to perform a localized hydrostatic test in a specific weld area. Each tool contains two parallel seals with a test chamber located in between them. The tool must be inserted into the pipe such that the seals straddle the weld.

Prior to beginning, pressure gauges must be selected to match the specific test application. Assure the selected gauge has a current calibration certificate. Proper gauge selection shall preferably have dials graduated over a range of approximately double the intended test pressure. In no case should the upper limit of the gauge be less than 1-1/2 times that pressure, nor more than 4 times the test pressure. Refer to the table below for recommended selection criteria.

Gauge Range (PSI)	Suitable for Tests	
	From	To
0-30	7.5	20
0-60	15	40
0-100	25	66
0-160	40	106
0-200	50	133
0-300	75	200
0-600	150	400
0-1000	250	666
0-2000	500	1333
0-5000	1250	3333
0-10000	2500	5333

1. Install correctly chosen seals and seal backing rings (if required) as per Appendix A: Tool and Seal Index Table.
2. Insert and position the MITT tool such that the weld being tested is centered between the two Seals, if possible.
3. Ensure fill and vent fittings are positioned 6 o'clock and 12 o'clock respectively to allow the test medium to properly fill the tool cavity and bleed off air.
4. Torque the tool nuts to compress the seals until initial contact is made with the piping internal diameter.
   - For single bolt tools, tighten using a crescent wrench. The nut must always be accessible.
   - For multi-bolt tool systems, a torque wrench may be used to tighten the compression nuts to the ASME PCC-1 Alternate Assembly Pattern #3.
5. Once the initial actuation is complete (the primary torque value is achieved), allow 5 minutes for relaxation of the seals. Check the torque applied prior to flooding the test chamber.
6. To introduce test medium into the cavity of the weld test tool, there are unique steps for single-bolt and multi-bolt tools to purge the air from the test chamber.
   - For single-bolt tools:
     i. Lightly actuate the seals until they fully make contact with the pipe ID.
     ii. Connect the test manifold, test gauge and other ancillaries, as normal
     iii. Fill the test chamber and begin to build pressure until the air is expelled where the pipe ID and seals make contact
     iv. Once the test medium begins to seep out, stroke the pump a few more times until only the test medium is leaking. This is referred to "burping the tool" to purge the air from the test chamber.
     v. Close the valve on the test manifold.
     vi. Lightly tighten the compression nut to make further pipe wall contact.
   - For multi-bolt tools:
     i. Connect a hose from the pump to the lower fitting and fill until medium begins to seep out of the upper fitting, then attach all hoses.
7. Install selected pressure gauges via quick disconnects.
8. Tighten fasteners to within the specified torque range in 25% increment steps of the desired torque until the desired torque value is achieved.

   Note: Some pressure may build up within the test cavity due to the compression of the area. If pressure buildup is greater than 10% of the desired test pressure, bleed the test cavity via the relief valve of the pump to zero and continue to torque. Repeat if necessary.
   - Torquing while under pressure of the test medium may cause one, or both, of the seals to roll from outside the seal retaining area. Should this occur, the seals will be damaged, unable to retain test pressure, and will cause the Enerpac MITT to become stuck within the pipe.
   - For applications with lower pressures and/or higher extrusion gaps, lower torque values are acceptable and often preferred to prevent seal extrusion.
   - For applications with higher test pressures and seal backers are not available, extra care may be required to torque the studs and pressurize to intermediate levels and longer intermediate hold times (still via ASME PCC-1 Alternate Assembly Patterns) as this will help to solidify the seals.
9. Once the desired torque value has been achieved, pressurize the test cavity in 25% increments of the prescribed test pressure. At each increment, stop and hold the pressure for the minimum of 1 minute. If possible, visually inspect the tool, looking for puddling of test medium or other signs of a leak occurring.
10. After the test pressure has been held for the specified amount of time and the Customer / Inspector confirms that their requirements have been satisfied, release the pressure to zero and recover test medium.
11. Disconnect gauge and pump hose assemblies.
12. Loosen the fasteners. Note that with multi-bolt tools to loosen no more than 3 turns per fasteners to evenly unload the torque and not overload a single stud.
13. Remove the tool from the pipe.
14. Visually inspect seals to determine if they are in good condition for further use or must be replaced.
15. Safely package the MITT tool for transport and storage in a way to prevent damage.

5.3 MITT Ancillary Kit Instructions

Overview

The Enerpac™ Mechanical Isolation and Test Tool Ancillary Kit (MITTAK) is a kit that contains all components required to safely and properly function MITT series tools for isolations and pressure tests. Each kit is split into the subassemblies laid out below. Some subassemblies will require assembling the components prior to mobilizing to the worksite. The below section illustrates how to safely assemble and connect each subassembly and how to integrate with the MITT tools to perform safe isolations and pressure testing.

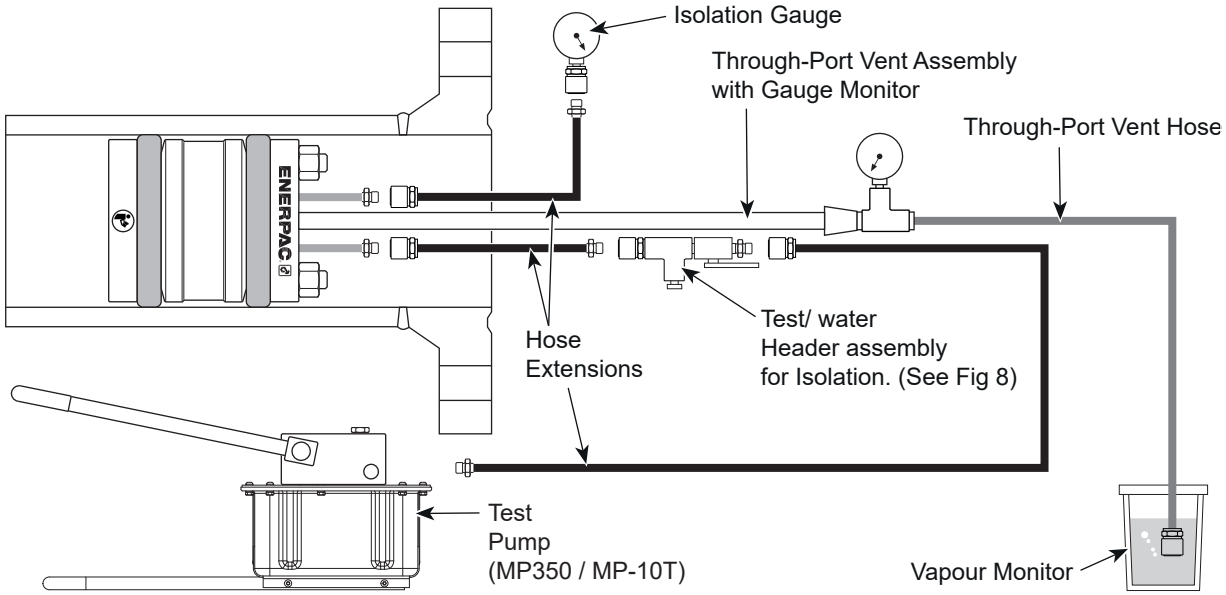


Figure 6: Isolation Arrangement

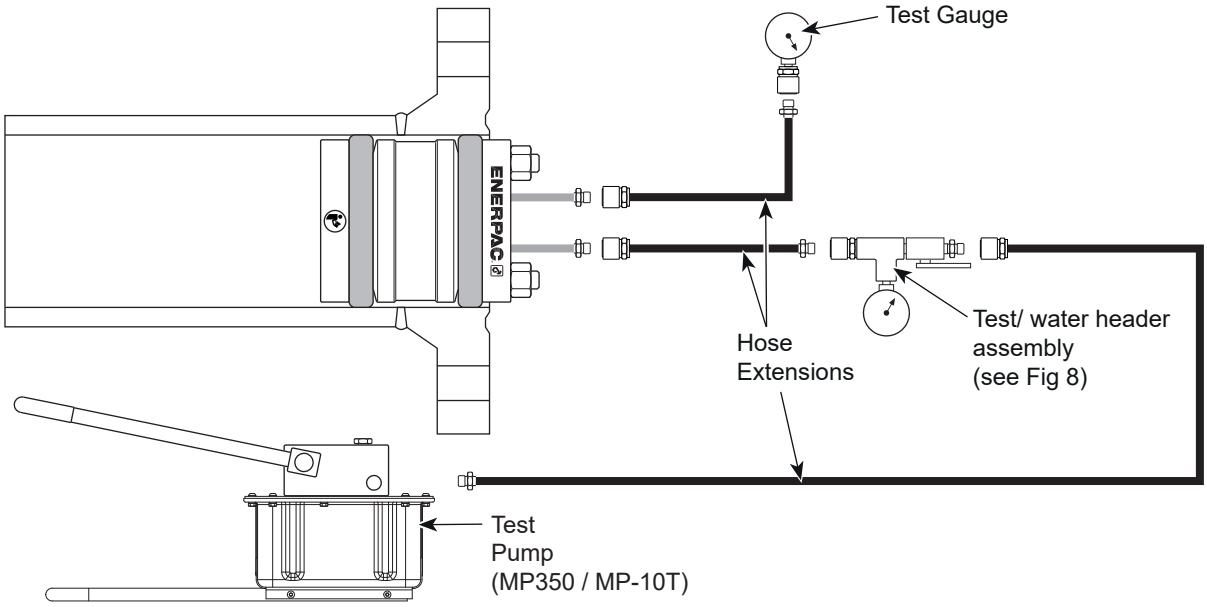


Figure 7: Test Arrangement

NOTICE Enerpac's recommended MITT system setup should be used in all applications that allow it. There are other industry-accepted components and methods for integrating ancillaries with the MITT series tools; however Enerpac must review and approve the use of different components and system arrangements incorporating the MITT series tools prior to use.

⚠ WARNING All ancillary components should be sourced from Enerpac to ensure suitability. Any components not sourced from Enerpac must, at a minimum, be properly rated to the application medium and pressures. Not following these recommendations can result in serious injury.

MITTAK Subassemblies

All subassemblies must be tightened as per Figure 6 and Figure 7 in accordance with standard hand tightening specifications. All threaded connections require Teflon tape or thread sealant.

*Note the MITTAK Ancillaries Kit does not include the pump. To source a pump from Enerpac, please order components listed in Table 2.

Table 1: Parts List for MITTAK Ancillaries Kit*

Part No	Top Level Description	Qty	Sub-Components	Qty (Sub-components per Assembly)	Qty (Total Sub-components per MITTAK)
CM4	Industrial Storage Case, 4.5 ft^3	1	-	-	-
DM1249900	Test/Water Header Assembly	2	1/4” Inline ball valve	1	2
			1/4” High-Flow QC (plug - male threads)	2	4
			1/4” Tee (Female x female x male)	1	2
			1/4” High-Flow QC (coupler - male threads)	1	2
DM1250900	1/4” High Flow QC w/Hex Plug	2	1/4” High-Flow QC (coupler - female threads)	1	2
			1/4” Hex-Socket Plug	1	2
DM1251900	Test Pressure Hose Fittings	4	1/4” High-Flow QC (coupler - female threads)	1	4
			1/4” High-Flow QC (plug - female threads)	1	4
DM1252900	Hand Tools	1	1/2” Drive Adjustable Torque Wrench - 20 to 150 ft.-lbs.	1	1
			1/2” Drive Socket Extension - 20” Long	1	1
			9/16” Point Alloy Combination wrench	1	1
			1-1/16” x 1/2” Drive 6 PT Deep Hand Socket	1	1
			9/16” x 1/2” Drive 6 PT Deep Hand Socket	1	1
			1/2” x 1/2” Drive 6 PT Deep Hand Socket	1	1
DM1253900	1/4” Pipe Extension - Water Assembly	4	1/4” High-Flow QC (coupler - female threads)	1	4
			1/4” Schedule 80 Pipe Nipple x 20”L	1	4
			1/4” High-Flow QC (plug - female threads)	1	4
DM1254900	Gauge Case w/Gauges Assembly	1	2” Dial Steel Case Multipurpose Gauge (0-30 PSI)*	2	2
			2” Dial Steel Case Multipurpose Gauge (0-100 PSI)*	2	2
			Protective Storage Case	1	1
		5	1/4” High-Flow QC (coupler - female threads)		
DM1255646	Vent Hose	2	50ft. Air hose with 1/4” NPT Male Fittings	1	2
DM1414900	Vent Pipes Assembly	2	1/8” x 24” Schedule 40 Black Steel Welded Pipe Nipple	1	2
			3/8” x 24” Schedule 40 Black Steel Welded Pipe Nipple	1	2
			3/4” x 24” Schedule 40 Black Steel Welded Pipe Nipple	1	2
			1/4” x 1/8” NPT 3000 lb Forged Steel Reducer Coupling	1	2
			3/8” x 1/4” NPT 3000 lb Forged Steel Reducer Coupling	1	2
			3/4” x 1/4” NPT 3000 lb Forged Steel Reducer Coupling	1	2
			1/4” Male NPT x 1/4” Female NPT Steel Street Tee	3	6
H9206Q	Hydraulic Hose with 1/4” NPT Male Fittings - 5800 PSI Rated - 6ft. Long	4	-	-	4
G2514L	Hydraulic Pressure Gauge, 2.50 in. Face, Lower Mount, Glycerine Filled, 1,000 maximum PSI	1	-	-	1
G2515L	Hydraulic Pressure Gauge, 2.50 in. Face, Lower Mount, Glycerine Filled, 2,000 maximum PSI	1	-	-	1
G2517L	Hydraulic Pressure Gauge, 2.50 in. Face, Lower Mount, Glycerine Filled, 6,000 maximum PSI	1	-	-	1

Items which are not included in the MITTAK Ancillaries Kit, but can be supplied if required, are listed below.

Table 2: Parts List for Pump, Hose and Reservoir Integration		
Part No	**Top Level Description**	**Qty**
MP350	Multifluid Hydraulic Hand Pump, two speed, 350 bar	1
MP-10T	Reservoir Kit	1
H9206Q	Hose, 6ft, 1/4” NPT	1
424126-131280	Reducer bushing from to 3/8” NPT male - female 1/4” NPT	1
0482836	1/4” high-flow Quick Connect female threads	1

To view the below assembly (DM1249900 with plug or DM1249900 with gauge) within the complete Isolation or Test Arrangement, see figures 6 and 7.

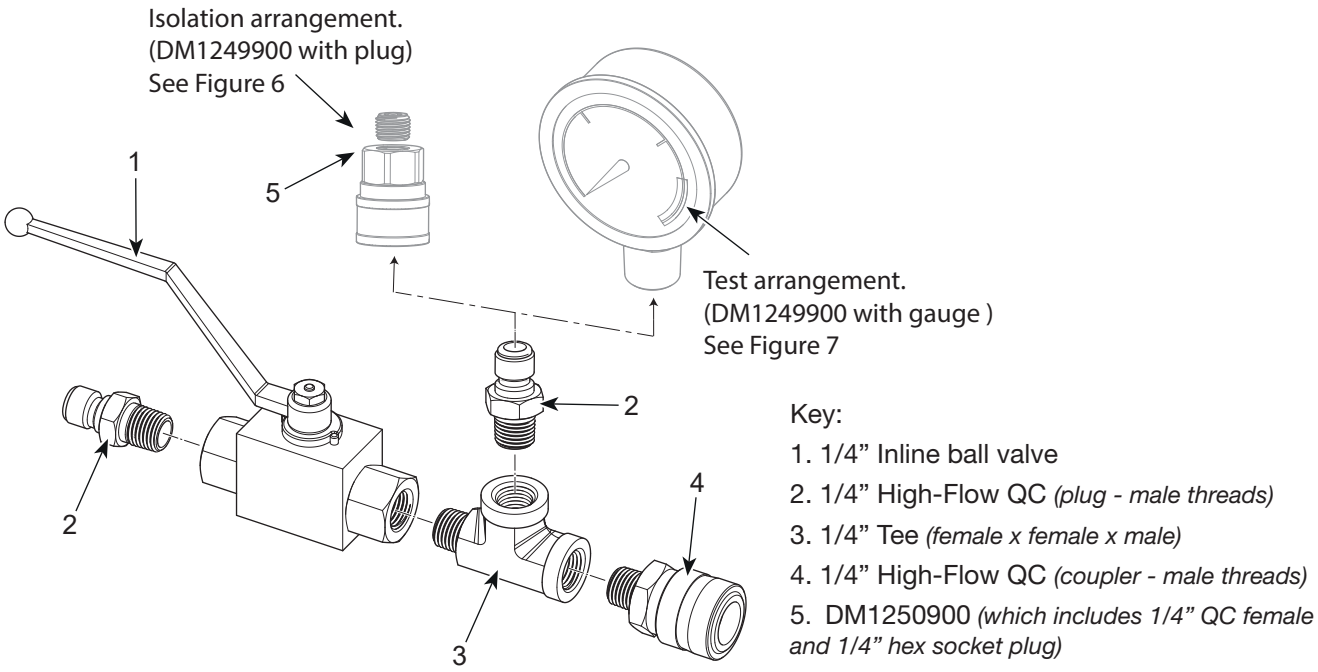


Figure 8: DM1249900 - Test/Water Header Assembly Overview

5.4 Special Instructions

This document is designed to address standard uses and scenarios for localized piping isolation and testing. There may be limited circumstances where variations to our standard procedures or tools are required in order to complete work satisfactorily. Some of these circumstances may include post weld radiographic testing, nitrogen purging, or other more unique scenarios.

In any cases that require job-specific tool design changes and/or procedural changes, these must be developed with and approved by Enerpac's engineering department.

6.0 MAINTENANCE

6.1 Inspection, Maintenance and Storage

Periodically check all MITT components for loose connections or damage. Before every application, all components and seals must be inspected to ensure that they are fit for use.

- Leaks in hose, tubing or fitting connections will not allow a proper seal and therefore pressure cannot be maintained. These will need to be retightened, repaired or replaced prior to use.
- Any gouges in aluminum body material, especially on the sealing surfaces of the annular ring, front and back plates, or seal backing rings, may prevent proper functionality of the tool. If unsure as to the impact of the damage, a practice test can be carried out or contact your local Enerpac repair center.
- Seals must be free of cuts, indentations and/or grooves due to damage from improper transport or previous testing. All of these will result in difficulty sealing and require seal replacement.

Periodically check that all orifices are free of debris and/or other obstructions (tubing, fittings, fill and vent ports). Obstructions can result in improper venting and pressure build-up that can become dangerous.

Store and transport MITT tools in the vertical position (resting on the back plate) and ensure they are properly secured to the pallet or crate that they are being transported in.

Seals must be stored in a covered, low-light area to minimize UV ray damage. Shelf-life for seals in exposed conditions can be as little as 6 months, while properly stored seals can last up to 24 months.

NOTICE MITT equipment must only be serviced by a qualified Enerpac technician. For repair service, contact the Enerpac Authorized Service Center in your area.

7.0 TROUBLESHOOTING

7.1 Hydrostatic Isolation Tool

Fault	Possible Cause	Corrective Action
Loss of hydrostatic pressure. Effect: The tool will still maintain an isolation via the remaining Seal but the extra safety factor provided has been lost.	Hydrostatic barrier is lost. Medium is leaking from the tool through the hose assembly or either through the front or back seal.	1. Stop any hot work 2. Investigate the source of pressure loss. If the medium is leaking from: • hoses, fittings or assembly, then either re-tighten fitings or reseal the fittings with Teflon tape in order to acheive a positive seal. • the front of the seal: Re-establish pressure if possible or adjust the front seal until a positive pressure is achieved. Additional torque may be required to the fasteners. • neither of the above, the back seal is bad: Re-establish pressure if possible. Additional torque may be required to the fasteners. 3. If unable to maintain positive pressure using the above methodology: • stop all work • clear area • reinstall following the tool installation procedure.
Back pressure indicated on through-port vent gauge. Effect: The tool is now operating as a plug, instead of the isolation and venting tool as designed.	There is an increase in pressure in the venting assembly of the isolation tool. Either the vent system has been plugged or the pressure building up behind the tool faster than it can be vented from the venting system.	If any pressure is noted on the vent gauge, immediately: 1. Stop all work 2. Clear area. Remain out of line of fire at all times. 3. Report problem to operations 4. Keep area clear until the problem is identified and solved. 5. Only re-enter area when operations has reported that it is safe to do so (may require gas test, a new permit, and additional PPE). 6. When returning, check isolation tool to ensure it is still intact and gauges are reading proper pressures.
Pressure or vacuum on isolation tool. Effect: If the pipe is venting, potentially dangerous gases may be released into the area. Caution is needed and extra PPE may be required. If the piping is under vacuum, the surrounding air is drawn into the pipe.	Thermal expansion and cooling can occur on piping when the pipe heats up or cools down. For example, when the pipe heats up during the day, the heat builds up pressure in the pipe which is then vented out of the isolation vent hose. During the evening, when the pipe cools, it can create a vacuum in the pipe and draw air into the vent hose to create an equilibrium.	When removing an isolation, first remove the vent gauge and check to determine if the pipe is either: • under pressure, and venting out of the pipe • under vacuum, drawing into the vent pipe • under equilibrium, neither venting or drawing 1. If the pipe is under pressure, vent to a safe area, until equilibrium is reached, before loosening tool. Additional venting may be required upstream of the MITT installation point - contact facility operations for assistance. 2. If the pipe is under vacuum, remove venting assembly and allow equilibrium to be reached before loosening the tool. Additional venting may be required upstream of the MITT installation point - contact facility operations for assistance. 3. If the pipe is under equilibrium follow normal procedures.
The MITT tool is difficult to remove after an isolation. Effect: Damage to the tool and seals upon removal.	The seals may have rolled over the front and/or back plates and become wedged between the tool and the pipe wall. The root weld pass is too large / protrudes into the pipe.	• For rolled seals, bump the tool a little further into the pipe to loosen the seal compression and then try to remove. If this does not work, the tool can be disassembled and removed one section at a time • For a large root weld pass, the tool must be pushed a little further into the pipe and reinstall the isolation per standard operating procedure prior to grinding flush the weld bead.

7.2 Hydrodymanic Isolations

Fault	Possible Cause	Corrective Action
Back pressure indicated on through-port vent gauge. Effect: The tool is now operating as a plug, instead of the isolation and venting tool as designed.	There is an increase in pressure in the venting assembly of the isolation tool. Either the vent system has been plugged or there is pressure building up behind the tool faster than it can be vented from the venting system.	If any pressure is noted on the vent gauge: 1. Do not turn off the water. 2. Stop all work. 3. Clear area. Remain out of line of fire at all times. 4. Report problem to operations 5. Keep area clear until the problem is identified and solved. 6. Only re-enter area when operations has reported that it is safe to do so (may require gas test, a new permit, and additional PPE). 7. When returning, check isolation tool to ensure it is still intact and gauges are reading proper pressures.
Loss of hydrodymanic flow. Effect: The tool will still maintain an isolation via the remaining Seal, but the extra safety factor provided by Vital technology has been lost. Additional hazards may be introduced into the work area. These can include steam and water. The steam is a potentially dangerous heat hazard that can cause severe burns. The water can create slip hazards, or in the presence of electricity (heat treating elements), can create a shock hazard. In all cases, you must continue to pump water through the tool until the pipe system has cooled. If the flow of water to the tool is stopped, the tool Seal system can melt / burn, the tool can be damaged, and the heat will not be safely isolated, creating a potentially dangerous environment.	Hydrostatic/Hydrodynamic barrier is lost. Medium is leaking from tool, through the hose assembly, the front Seal or back Seal.	1. Contact operations, the customer and the stress relieving personnel. They will determine the next steps to be taken and whether the work will continue or not. In all cases, the water must be left on until the tool has cooled sufficiently. 2. Do not turn off the water. 3. Investigate the source of pressure loss. 4. If the medium is leaking from hoses, fittings, or assembly and it is safe to do so, either re-tighten fittings or re-seal the fittings with Teflon tape in order to achieve a positive seal. 5. If the medium is leaking from the back seal, continue with the heat treating or stress relieving. Notify operations that water is leaking into the line in the event the line is moisture sensitive. Continue to pump water through the tool. 6. If the medium is leaking from the front seal, significant steam will be generated and the heat-treating process will be in jeopardy. Immediately: • Do not turn off the water (this is the instinctive reaction) • Clear area

7.3 Pressure Testing - Hydrostatic Testing

Fault	Possible Cause	Corrective Action
Loss of or dropping hydrostatic pressure Effect: Hydrostatic test pressure unable to be achieved and/ or held. It may be possible to achieve and maintain test pressure continuing to utilize the pump for the prescribed timeframe. Consult site QA/QC whether maintaining pressure is acceptable.	Hydrostatic pressure is lost or dropping. Medium is leaking from the tool through the hose assembly, ancillaries or either through the front or back seal.	1. Investigate the source of the pressure loss. If the medium is leaking from: • Hoses, fittings or other ancillaries, then either re-tighten or reseal the fittings with Teflon tape in order to achieve a positive seal. Replace any faulty or damaged components as required. • The front and/or rear seal: Additional torque may be required. Consult torque range for the tool model, bleed any hydrostatic pressure remaining to zero, apply additional torque to the fasteners, repeat the pressurization process. 2. If unable to achieve or maintain hydrostatic test pressure: • Uninstall MITT. • Inspect the MITT seals and sealing areas of both the tool and pipe ID for defects. Replace and/or clean as necessary. • Reinstall as per the hydrostatic testing process.
	Air pocket trapped within the test cavity.	1. Bleed any remaining pressure from the test cavity. 2. Disconnect the test gauge and repeat air purging per the installation process.
	Ambient temperature fluctuations.	1. Evaluate near future weather conditions. 2. Discuss more favorable conditions and scheduling with all relevant parties.
	Mismatched pipe bores at seal/test location.	1. Uninstall the MITT. 2. Identify the schedules / wall thicknesses of both pipe bores for the application. 3. Choose the appropriate seals for each pipe bore and arrange both on the MITT accordingly to the application and tool positioning. 4. Reinstall as per the hydrostatic testing process.
Failure to obtain a leak tight test area between the seals Effect: Hydrostatic pressure completely unable to be achieved or built.	Incorrect tool size or seals selected to suit the pipe bore.	1. Confirm nominal pipe size and schedule / wall thickness. Wall thickness measurement may be required. 2. Choose correct MITT and seals. 3. Reinstall as per the hydrostatic testing process.
	Loose debris, mill scale, or excessive rust in the pipe bore.	1. Uninstall MITT and inspect testing area. 2. Clean testing area of all debris, scale and rust with a wire brush and solvent. Wipe entire testing area dry / clean. Consult asset owner for approval of solvent types acceptable prior to use. 3. Reinstall as per the hydrostatic testing process.

Hydrostatic Testing continued

Fault	Possible Cause	Corrective Action
Failure to obtain a leak tight test area between the seals Effect: Hydrostatic pressure completely unable to be achieved or built.	Internal weld bead or pipe seam interfering with one or both seals.	1. Uninstall MITT and inspect testing area and existing seal condition. Replace seals if found damaged from the weld bead or pipe seam. 2. File or grind the weld bead or pipe seam to an acceptable level. Every effort should be made to make it as flush as possible with the pipe ID. 3. Clean testing area of all debris created from filing or grinding. Wipe entire testing area dry / clean. Consult asset owner for approval of solvent types acceptable, if used. 4. Reinstall as per the hydrostatic testing process.
	Pipe is excessively pitted or excessive localized pipe wall erosion exists.	1. Uninstall MITT and inspect testing area. 2. Clean testing area of all debris, scale and rust with a wire brush and solvent. Wipe entire testing area dry / clean. Consult asset owner for approval of solvent types acceptable prior to use. 3. In cases of wall erosion is suspected: • A wall thickness reading must be taken to confirm appropriate seals are being used. • Consult the seal selection guide upon reviewing the wall thickness reading and comparing findings to a pipe table. • Consult Enerpac technical support, if required. 4. In cases where excessive pipe wall pitting is found: • A lower durometer seal material may be required. This may cause depreciated test pressure capabilities. • Consult Enerpac technical support for seal selection and availability.
	Excessively out of round pipe.	1. Uninstall MITT and inspect testing area. 2. Measure the high/low points of the pipe diameter. 3. Consult Enerpac technical support.
Seal(s) roll out of retaining area. Effect: Hydrostatic pressure unable to be achieved or built. Seals lodge between the pipe ID and MITT OD, causing all or part of the MITT to become stuck in the pipe.	Excessive torque applied to MITT fasteners.	1. Uninstall MITT and inspect seals for damage and/or grooving. Replace damaged seals. 2. Consult and utilize appropriate torque range of the selected MITT.
	Additional torque was applied to MITT while under hydrostatic pressure.	1. Uninstall MITT and inspect seals for damage and/or grooving. Replace damaged seals. 2. Consult and utilize appropriate torque range of the selected MITT. • If additional torque is required during installation to seal a leak, ALWAYS bleed the hydrostatic pressure to zero (0) prior to adding the additional torque. • Note that pressure build up will occur when adding torque anytime test medium is present in the test cavity. This is due to compression of the cavity when the addition torque is applied, even when previously bled to zero (0). If pressure exceeds more than 10% of the target test pressure, rebleed the hydrostatic pressure. Repeat until the desired torque value is achieved. 3. Reinstall as per the hydrostatic testing process.
The MITT tool is difficult to remove after a pressure test. Effect: Damage to the tool and seals upon removal.	The seals may have rolled over the front and/or back plates and become wedged between the tool and the pipe wall. The root weld pass is too large / protrudes into the pipe.	• For rolled seals, bump the tool a little further into the pipe to loosen the seal compression and then try to remove. If this does not work, the tool can be disassembled and removed one section at a time. • For a large root weld pass, the tool must be pushed a little further into the pipe and reinstall the isolation per standard operating procedure prior to grinding flush the weld bead.

8.0 TECHNICAL DATA

Key to Table Symbols

* Pressure between seals up to this value can be achieved with optional seal backing rings and higher shore hardness seals. In-field conditions may not allow these pressures to be achieved. Always ensure weld test pressure used never exceeds safe pipe loading. Refer to the MITT Series - Seal Selection Guide document in Appendix A for capabilities at each pipe schedule and recommended seals and seal backing rings.

** This tool comes standard with seal backing ring for this pipe schedule; to meet pressure capability requirement.

§ Pressure capability of tool at pipe schedule in factory conditions. In-field conditions may not allow these pressures to be achieved. Always ensure weld test pressure used never exceeds safe pipe pressure loadings.

UM Unlubricated Maximum Torque value
LM Lubricated Maximum Torque value

*** **If sealing cannot be achieved using the information provided, contact Enerpac for further recommendations**

8.1 Single Bolt Specifications (0.75” - 2”) ***

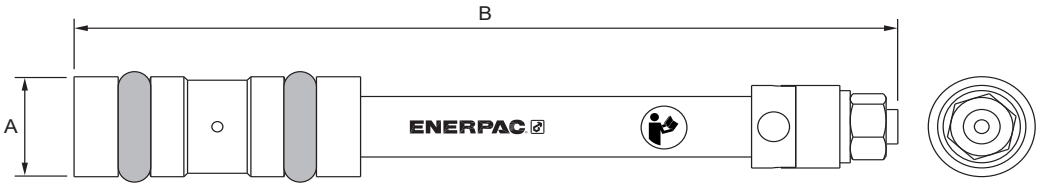


Figure 9: Single-Bolt Representation

Part No.	Nominal Pipe Size [DN]	Pipe Schedules Covered [mm - wall thickness]	OD (A) in [mm]	Standard Pressure Rating (Out of the box) § PSI [bar]	Tool Maximum Pressure Rating * PSI [bar]	Stud Nut Washer Size (Qty)	Max Torque per Stud ft.lb [Nm]	Pressure Port Size (ASME)	Seals included with Tool	Seal Backers included with Tool	Overall Length (B) in [mm]	Weight LBS [KG]
MITT075A	3/4” [20]	5 [1.65]	0.699 [18]	< 425[29.3]	4500 [310.2]	0.375 (1)	LM:25 [33.9] UM:30 [40.7]	Female 1/8” NPT	MITT075ASTD/40SK MITT075AXS/80SK	MITT075ASTD/40BR	14 [356]	1.656 [0.751]
		10 [2.11]		1150 [79.2]								
		STD/40 [2.87]		** 2250[155.1]								
		XS/80 [3.91]		3300 [227.5]								
MITT075B		160 [5.56]	0.58 [15]	4500 [310.2]					MITT075B160SK	-		1.525 [0.692]
MITT1A	1” [25]	5 [1.65]	0.924 [23]	1150 [79.2]	4500 [310.2]	0.375 (1)	LM:25 [33.9] UM: 30 [40.7]	Female 1/8” NPT	MITT1ASTD/40SK	MITT1ASTD/40BR	14 [356]	1.875 [0.850]
		10 [2.77]		1150 [79.2]								
		STD/40 [3.38]		** 2250[155.1]								
MITT1B		XS/80 [4.55]	0.690 [18]	** 3375[232.6]					MITT1BXS/80SK MITT1B160SK	MITT1BXS/80BR MITT1B160BR		1.6 [0.73]
		160 [6.35]		** 4500[310.2]								
MITT125A	1-1/4” [32]	5 [1.65]	1.13 [29]	< 425[29.3]	3350 [230.9]	0.625 (1)	LM:55 [74.5] UM: 60 [81.3]	Female 1/4” NPT	MITT125ASTD-40SK MITT125AXS-80SK	MITT125ASTD/40BR	14 [356]	2.906 [1.318]
		10 [2.77]		425 [29.3]								
		STD/40 [3.56]		** 2250[155.1]								
		XS/80 [4.85]		3350 [230.9]								
MITT150A	1-1/2” [40]	5 [1.65]	1.36 [35]	425 [29.3]	4500 [310.2]	0.625 (1)	LM:55 [74.5] UM: 60 [81.3]	Female 1/4” NPT	MITT150ASTD-40SK MITT150AXS-80SK	-	14 [356]	4.050 [1.837]
		10 [2.77]		1150 [79.2]								
		STD/40[3.68]		2250 [155.1]								
		XS/80 [5.08]		3375 [232.6]								
MITT150B		160 [7.14]	1.088 [28]	** 4500 [310.2]					MITT150B160SK	MITT150B160BR		3.438 [1.559]
MITT2A	2” [50]	5 [1.65]	1.817 [46]	425 [29.3]	3375 [232.6]	0.625 (1)	LM:55 [74.5] UM: 60 [81.3]	Female 1/4” NPT	MITT2ASTD-40SK MITT2AXS-80SK	-	14 [356]	5.375 [2.438]
		10 [2.77]		1150 [79.2]								
		STD/40[3.91]		2250 [155.1]								
		XS/80 [5.54]		3375 [232.6]								
MITT2B		160 [8.74]	1.437 [36]	** 4500[310.2]	4500 [310.2]				MITT2B160SK MITT2BXXSSK	MITT2B160BR		4.319 [1.959]
		XXS [11.07]		** 4500[310.2]								

Internal Seals:

MITT075A - MITT1B (3/4” - 1”)	MITT075-1AINTSK
MITT125A - MITT2B (1-1/4” - 2”)	MITT1.25-2INTSK

8.2 Multi-Bolt Specifications (3” - 40”) ***

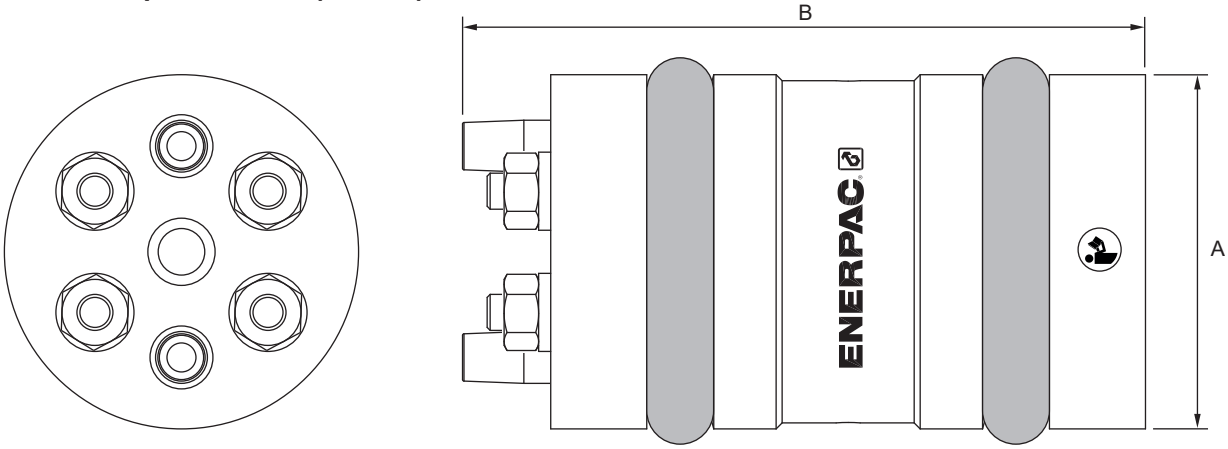


Figure 10: Multi-Bolt 4” Representation

Part No.	Nominal Pipe Size [DN]	Pipe Schedules Covered [mm - wall thickness]	OD (A) in [mm]	Standard Pressure Rating (Out of the box) § PSI [bar]	Tool Maximum Pressure Rating ⋆ PSI [bar]	Stud Nut Washer Size (Qty)	Max Torque per Stud ft.lb [Nm]	Pressure Port Size (ASME)	Seals included with Tool	Seal Backers included with Tool	Overall Length (B) in [mm]	Weight LBS [KG]
MITT3A	3” [80]	5 [2.11]	2.775 [70]	1150 [79.2]	3375 [232.6]	5/16” (4)	LM: 25 [33.9] UM: 30 [40.7]	Male 1/8” NPT	MITT3ASTD-40SK MITT3AXS-80SK	-	7 [178]	5 [2.27]
		10 [3.05]		1150 [79.2]								
		STD/40 [5.49]		2250 [155.1]								
		XS/80 [7.62]		3375 [232.6]								
MITT3B		160 [11.13]	2.250 [57]	** 3375[232.6]	4500 [310.2]				MITT3B160SK MITT3BXXSSK	-		4.5 [2.04]
		XXS [15.24]		** 2250[155.1]								
MITT4A	4” [100]	5 [2.11]	3.688 [94]	425 [29.3]	2250 [155.1]	3/8” (4)	LM: 40 [54.2] UM: 45 [61.0]	Male 1/8” NPT	MITT4ASTD-40SK MITT4A60SK MITT4AXS-80SK	-	7 [178]	5.59 [2.55]
		10 [3.05]		425 [29.3]								
		STD/40 [6.02]		1150 [79.2]								
		60 [7.1]		2250 [155.1]	3375 [232.6]							
		XS/80 [8.56]		3300 [227.5]								
MITT4B		120 [11.13]	3.188 [81]	** 3375[232.6]	4500 [310.2]				MITT4B120SK MITT4B160SK	-		4.81 [2.18]
		160 [13.49]		4500 [310.2]								
MITT4C		XXS [17.12]	3.027 [77]	3375 [232.6]					MITT4CXXSSK			4.25 [1.93]
MITT6A	6” [150]	10 [3.40]	5.69 [145]	1150 [79.2]	3375 [232.6]	5/8” (4)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT6ASTD-40SK MITT6A60SK	-	7 [178]	13.744 [6.233]
		STD/40 [7.11]		2250 [155.1]								
		60		2250 [155.1]								
MITT6B		XS/80 [10.97]	5.386 [137]	2250 [155.1]					MITT6BXS-80SK MITT6B120SK	-		12.450 [5.646]
		120 [14.27]		3300 [227.5]								
MITT6C		160 [18.26]	4.812 [122]	2250 [55.1]	4500 [310.2]				MITT6C160SK MITT6CXXSSK	MITT6C160BR		10.244 [4.646]
		XXS [21.95]		3300 [227.5]								
MITT8A	8” [200]	10 [3.76]	7.438 [189]	425 [29.3]	3375 [232.6]	5/8” (8)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT8A30SK MITT8ASTD-40SK MITT8A60SK MITT8AXS-80SK	-	7 [178]	19.194 [8.705]
		20 [6.35]		1150 [79.2]								
		30 [7.04]		1150 [79.2]								
		STD/40 [8.18]		1150 [79.2]								
		60 [10.31]		2250 [155.1]								
		XS/80 [12.70]		3375 [232.6]								
MITT8B		100 [15.09]	6.626 [168]	425 [29.3]	4500 [310.2]				MITT8B100SK MITT8B120SK MITT8B140SK MITT8BXXSSK MITT8B160SK	MITT8B120BR MITT8B160BR		16.369 [7.423]
		120 [18.26]		** 3375[232.6]								
		140 [20.62]		2250 [155.1]								
		XXS [22.23]		2250 [155.1]								
		160 [23.01]		3300 [227.5]								

Multi-Bolt Specifications (3” - 40”) continued ***

Part No.	Nominal Pipe Size [DN]	Pipe Schedules Covered [mm - wall thickness]	OD (A) in [mm]	Standard Pressure Rating (Out of the box) § PSI [bar]	Tool Maximum Pressure Rating ⋆ PSI [bar]	Stud Nut Washer Size (Qty)	Max Torque per Stud ft.lb [Nm]	Pressure Port Size (ASME)	Seals included with Tool	Seal Backers included with Tool	Overall Length (B) in [mm]	Weight LBS [KG]
MITT10A	10” [250]	20 [6.35]	9.375 [238]	< 425 [29.3]	3375 [232.6]	5/8” (8)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT10A30SK MITT10ASTD-40SK MITT10AXS-60SK MITT10A80SK	-	7 [178]	29.000 [13.152]
		30 [7.80]		425 [29.3]								
		STD/40 [9.27]		1150 [79.2]								
		XS/60 [12.7]		2250 [155.1]								
		80 [15.09]		1150 [79.2]								
MITT10B		100 [18.26]	8.375 [213]	425 [29.3]	4500 [310.2]				MITT10B100SK MITT10B120SK MITT10BXXS-140SK MITT10B160SK	MITT10B120BR MITT10B160BR		24.994 [11.335]
		120 [21.44]		⋆⋆ 2250[155.1]								
		XXS/140 [25.40]		2250 [155.1]								
		160 [28.58]		⋆⋆ 4500[310.2]								

MITT12A	12” [300]	10 [4.57]	11.563 [294]	425 [29.3]	2250 [155.1]	5/8” (12)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT12A30SK MITT12ASTDSK MITT12A40SK MITT12AXSSK	MITT12A30BR	7 [178]	43.000 [19.501]
		20 [6.35]		1150 [79.2]								
		30 [8.38]		⋆⋆ 1150[79.2]								
		STD [9.53]		1150 [79.2]								
		40 [10.31]		1150 [79.2]								
		XS [12.70]		1150 [79.2]								
MITT12B		60 [14.27]	10.687 [271]	425 [29.3]	3375 [232.6]				MITT12B60SK MITT12B80SK MITT12B100SK MITT12BXXS-120SK	MITT12B80BR		41.000 [18.594]
		80 [17.48]		⋆⋆ 2250[155.1]								
		100 [21.44]		2250 [155.1]								
		XXS / 120 [25.40]		3300 [227.5]								
MITT12C		140 [28.58]	9.751 [248]	1150 [79.2]	4500 [310.2]				MITT12C140SK MITT12C160SK	MITT12C160BR		32.000 [14.512]
		160 [33.32]		2250 [155.1]								

MITT14A	14” [350]	10 [6.35]	12.749 [324]	425 [29.3]	1150 [79.2]	5/8” (14)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT14ASTD-30SK MITT14A40SK MITT14BXSSK	-	7 [178]	45.000 [20.408]
		20 [7.92]		425 [29.3]								
		STD/30 [9.53]		1150 [79.2]								
		40 [11.13]		1150 [79.2]								
MITT14B		XS [12.70]	12.125 [308]	1150 [79.2]	2250 [155.1]				MITT14B60SK MITT14B80SK	-		42.000 [19.048]
		60 [15.09]		1150 [79.2]								
		80 [19.05]		1150 [79.2]								
MITT14C		100 [23.82]	11.125 [283]	< 425 [29.3]	4500 [310.2]				MITT14C100SK MITT14C120SK MITT14C140SK MITT14C160SK	MITT14C120BR		38.000 [17.234]
		120 [27.79]		⋆⋆ 2250[155.1]								
		140 [31.75]		1150 [79.2]								
		160 [35.71]		3300 [227.5]								

Multi-Bolt Specifications (3” - 40”) continued ***

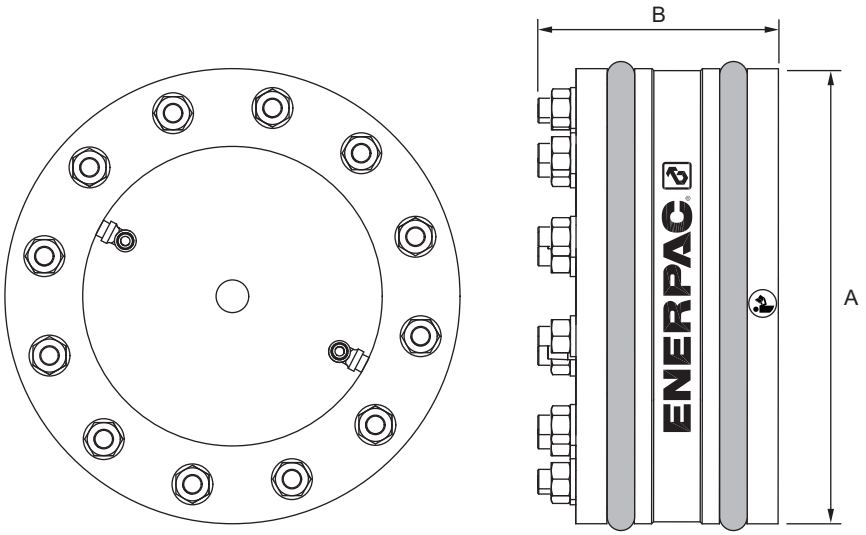


Figure 11: Multi-Bolt 16” Representation

Part No.	Nominal Pipe Size [DN]	Pipe Schedules Covered [mm - wall thickness]	OD (A) in [mm]	Standard Pressure Rating (Out of the box) § PSI [bar]	Tool Maximum Pressure Rating ⋆ PSI [bar]	Stud Nut Washer Size (Qty)	Max Torque per Stud ft.lb [Nm]	Pressure Port Size (ASME)	Seals included with Tool	Seal Backers included with Tool	Overall Length (B) in [mm]	Weight LBS [KG]
MITT16A	16” [400]	10 [6.35]	14.625 [371]	425 [29.3]	2250 [155.1]	5/8” (12)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT16ASTD-30SK MITT16AXS-40SK MITT16A60SK	-	7 [178]	54.000 [24.49]
		20 [7.92]		1150 [79.2]								
		STD/30 [9.53]		⋆⋆ 1150[79.2]								
		XS/40 [12.70]		⋆⋆ 1150[79.2]								
		XS [12.70]		1150 [79.2]								
		60 [16.66]		2250 [155.1]								
MITT16B		80 [21.44]	13.563 [345]	425 [29.3]	3300 [227.5]				MITT16B80SK MITT16B100SK	-		48.000 [21.77]
		100 [26.19]		1150 [79.2]								
MITT16C		120 [30.96]	12.749 [324]	425 [29.3]	4500 [310.2]				MITT16C120SK MITT16C140SK MITT16C160SK	-		45.000 [20.41]
		140 [36.53]		1150 [79.2]								
		160 [40.49]		3300 [227.5]								

MITT18A	18” [450]	10 [6.35]	16.501 [419]	< 425 [29.3]	2250 [155.1]	5/8” (16)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT18ASTDSK MITT18A30SK MITT18AXSSK MITT18A40SK	-	7 [178]	64.00 [29.02]
		20 [7.92]		425 [29.3]								
		STD [9.53]		425 [29.3]								
		30 [11.13]		425 [29.3]								
		XS [12.70]		1150 [79.2]								
		40 [14.27]		1150 [79.2]								
MITT18B		60 [19.05]	15.749 [400]	1150 [79.2]					MITT18B60SK MITT18B80SK	-		60.00 [27.21]
		80 [23.83]		1150 [79.2]								
MITT18C		100 [29.36]	14.875 [378]	425 [29.3]	3375 [232.6]				MITT18C100SK MITT18C120SK	-		55.00 [24.94]
		120 [34.93]		⋆⋆ 1150[79.2]								
MITT18D		140 [39.67]	14.063 [357]	425 [29.3]	4500 [310.2]				MITT18D140SK MITT18D160SK	-		52.00 [23.58]
		160 [45.24]		425 [29.3]								

Multi-Bolt Specifications (3” - 40”) continued ***

Part No.	Nominal Pipe Size [DN]	Pipe Schedules Covered [mm - wall thickness]	OD (A) in [mm]	Standard Pressure Rating (Out of the box) § PSI [bar]	Tool Maximum Pressure Rating ⋆ PSI [bar]	Stud Nut Washer Size (Qty)	Max Torque per Stud ft.lb [Nm]	Pressure Port Size (ASME)	Seals included with Tool	Seal Backers included with Tool	Overall Length (B) in [mm]	Weight LBS [KG]
MITT20A	20” [500]	10 [6.35]	18.875 [479]	425 [29.3]	1150 [79.2]	5/8” (16)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT20ASTD-20SK MITT20AXS-30SK	-	7 [178]	80.00 [36.28]
		STD/20 [9.53]										
		XS/30 [12.70]										
MITT20B		40 [15.09]	18.001 [457]		2250 [155.1]				MITT20B40SK MITT20B60SK	-		73.00 [33.11]
		60 [20.62]										
MITT20C		80 [26.19]	17.063 [433]		3300 [227.5]				MITT20C80SK MITT20C100SK	-		67.00 [30.39]
		100 [32.54]										
MITT20D		120 [38.10]	16.125 [410]		4500 [310.2]				MITT20D120SK MITT20D140SK	-		61.00 [27.66]
		140 [44.45]										
MITT20E		160 [50.01]	15.687 [398]						MITT20E160SK	-		60 [27.22]
MITT22A	22” [550]	STD [9.53]	20.625 [524]	425 [29.3]	1150 [79.2]	5/8” (18)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT22ASTDSK MITT22AXSSK	-	7 [178]	89 [40.37]
		XS [12.70]										
MITT22B		60 [22.23]	19.375 [492]		2250 [155.1]				MITT22B60SK MITT22B80SK	-		81 [36.74]
		80 [28.58]										
MITT22C		100 [34.93]	18.375 [467]		3375 [232.6]				MITT22C100SK MITT22C120SK	-		75 [34.02]
		120 [41.28]										
MITT22D		140 [47.63]	17.375 [441]	< 425 [29.3]	4500 [310.2]				MITT22D140SK MITT22D160SK	-		69 [31.30]
		160 [53.98]		425 [29.3]								
MITT24A	24” [600]	10 [6.35]	22.625 [575]	425 [29.3]	1150 [79.2]	5/8” (20)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT24ASTD-20SK MITT24AXSSK	-	7 [178]	99.00 [44.90]
		STD/20 [9.53]										
		XS [12.70]										
		30 [14.27]										
MITT24B		40 [17.48]	21.687 [551]		2250 [155.1]				MITT24B40SK MITT24B60SK	-		94.00 [42.63]
		60 [24.61]										
MITT24C		80 [30.96]	20.563 [522]	< 425 [29.3]	3375 [232.6]				MITT24C80SK MITT24C100SK	-		88.00 [39.91]
		100 [38.89]		425 [29.3]	4500 [310.2]							
MITT24D		120 [46.02]	19.501 [495]						MITT24D120SK MITT24D140SK	-		82.00 [37.19]
		140 [52.37]										
MITT24E		160 [59.54]	18.875 [479]						MITT24E160SK	-		80 [36.29]
MITT26A	26” [650]	10 [7.92]	24.625 [625]	< 425 [29.3]	1150 [79.2]	5/8” (22)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT26ASTDSK MITT26AXSSK	-	7 [178]	115 [52.16]
		STD [9.53]		425 [29.3]								
		XS [12.70]										
MITT30A	30” [750]	10 [7.92]	28.625 [727]	< 425 [29.3]	1000 [68.9]	5/8” (28)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT30ASTDSK MITT30AXS-20SK MITT30A40SK	-	7 [178]	147.00 [66.67]
		STD [9.53]		425 [29.3]								
		XS/20 [12.70]										
		30 [15.88]										
MITT30B		XS [12.70]	28.125 [714]		1150 [79.2]				MITT30BXSSK	-		140 [63.50]

Multi-Bolt Specifications (24” - 40”) continued ***

Part No.	Nominal Pipe Size [DN]	Pipe Schedules Covered [mm - wall thickness]	OD (A) in [mm]	Standard Pressure Rating (Out of the box) § PSI [bar]	Tool Maximum Pressure Rating ⋆ PSI [bar]	Stud Nut Washer Size (Qty)	Max Torque per Stud ft.lb [Nm]	Pressure Port Size (ASME)	Seals included with Tool	Seal Backers included with Tool	Overall Length (B) in [mm]	Weight LBS [KG]
MITT32A	32” [800]	10 [7.92]	30.625 [778]	< 425 [29.3]	1150 [79.2]	5/8” (28)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT32ASTDSK MITT32AXS-20SK	-	7 [178]	158 [71.67]
		STD [9.53]		425 [29.3]								
		XS/20 [12.70]										
		30 [15.88]										
MITT32B		40 [17.48]	30.249 [768]						MITT32B40SK	-		155 [70.31]
MITT34A	34” [850]	10 [7.92]	32.625 [829]	< 425 [29.3]	1150 [79.2]	5/8” (30)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT34ASTDSK MITT34AXS-20SK	-	7 [178]	168 [76.20]
		STD [9.53]		425 [29.3]								
		XS/20 [12.70]										
		30 [15.88]										
MITT34B		40 [17.48]	32.249 [819]						MITT34B40SK	-		165 [74.84]
MITT36A	36” [900]	10 [7.92]	34.625 [879]	< 425 [29.3]	425 [29.3]	5/8” (32)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT36ASTDSK MITT36AXSSK	-	7 [178]	187 [84.81]
		STD [9.53]		425 [29.3]								
		XS [12.70]										
MITT38A	38” [950]	STD [9.53]	36.625 [930]	425 [29.3]	425 [29.3]	5/8” (36)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT38ASTDSK MITT38AXSSK	-	7 [178]	208 [94.35]
		XS [12.70]		425 [29.3]								
MITT40A	40” [1000]	STD [9.53]	38.625 [981]	425 [29.3]	425 [29.3]	5/8” (38)	LM: 110 [149.1] UM: 120 [162.7]	Male 1/4” NPT	MITT40ASTDSK MITT40AXSSK	-	7 [178]	230 [104.33]
		XS [12.70]		425 [29.3]								

9.0 TOP LEVEL ASSEMBLIES

9.1 Single Bolt Top Level Assemblies

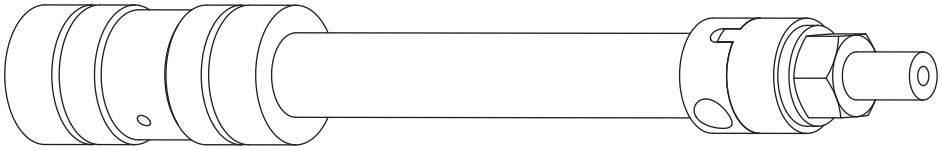


Figure 12: Typical Single Bolt Configuration for Sizes 0.75” - 2” (excluding Seals)

Part Number	Description
MITT075A	0.75” A TOOL COVERS PIPE SCHDS 5 TO 80 TO 4500 PSI MAX
MITT075B	0.75” B TOOL COVERS PIPE SCHD 160 TO 4500 PSI MAX
MITT1A	1” A TOOL COVERS PIPE SCHDS 5 TO 40 TO 4500 PSI MAX
MITT1B	1” B TOOL COVERS PIPE SCHDS 80 TO 160 TO 4500 PSI MAX
MITT125A	1.25” A TOOL COVERS PIPE SCHDS 5 TO 80 TO 4500 PSI MAX
MITT150A	1.50” A TOOL COVERS PIPE SCHDS 5 TO 80 TO 4500 PSI MAX
MITT150B	1.50” B TOOL COVERS PIPE SCHD 160 TO 4500 PSI MAX
MITT2A	2” A TOOL COVERS PIPE SCHDS 5 TO 80 TO 4500 PSI MAX
MITT2B	2” B TOOL COVERS PIPE SCHDS 160 TO XXS TO 4500 PSI MAX

9.2 Multi Bolt Top Level Assemblies

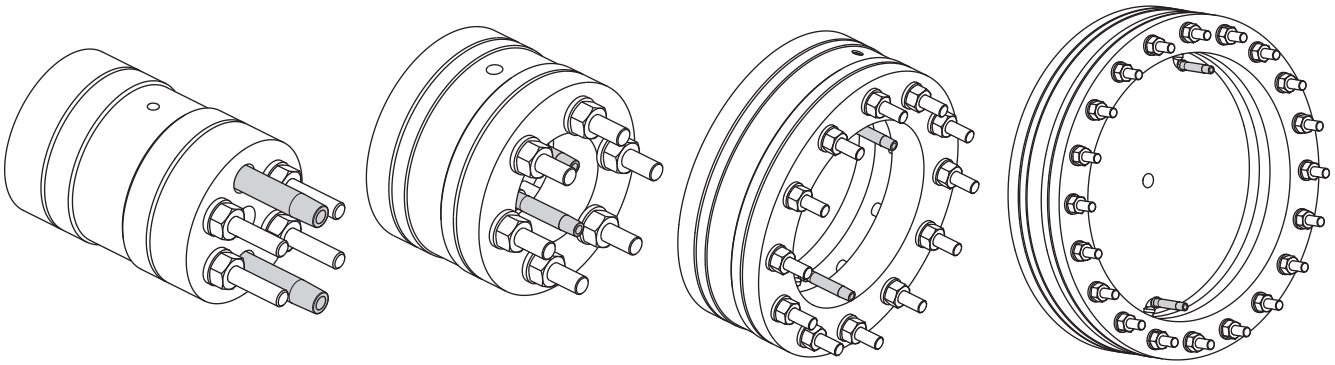


Figure 13: Typical Multi Bolt Configrations (excluding Seals)

Part Number	Description
MITT3A	3” A TOOL COVERS PIPE SCHDS 5 TO 80 TO 4500 PSI MAX
MITT3B	3” B TOOL COVERS PIPE SCHDS 160 TO XXS TO 4500 PSI MAX
MITT4A	4” A TOOL COVERS PIPE SCHDS 5 TO 80 TO 4500 PSI MAX
MITT4B	4” B TOOL COVERS PIPE SCHDS 120 TO 160 TO 4500 PSI MAX
MITT4C	4” C TOOL COVERS PIPE SCHD XXS TO 4500 PSI MAX
MITT6A	6” A TOOL COVERS PIPE SCHDS 10 TO 60 TO 4500 PSI MAX
MITT6B	6” B TOOL COVERS PIPE SCHDS 80 TO 120 TO 4500 PSI MAX
MITT6C	6” C TOOL COVERS PIPE SCHDS 160 TO XXS TO 4500 PSI MAX
MITT8A	8” A TOOL COVERS PIPE SCHDS 10 TO 80 TO 4500 PSI MAX
MITT8B	8” B TOOL COVERS PIPE SCHDS 100 TO 160 TO 4500 PSI MAX
MITT10A	10” A TOOL COVERS PIPE SCHDS 20 TO 80 TO 4500 PSI MAX
MITT10B	10” B TOOL COVERS PIPE SCHDS 100 TO 160 TO 4500 PSI MAX
MITT12A	12” A TOOL COVERS PIPE SCHDS 10 TO XS TO 4500 PSI MAX
MITT12B	12” B TOOL COVERS PIPE SCHDS 60 TO 120 TO 4500 PSI MAX
MITT12C	12” C TOOL COVERS PIPE SCHDS 140 TO 160 TO 4500 PSI MAX
MITT14A	14” A TOOL COVERS PIPE SCHDS 10 TO 40 TO 4500 PSI MAX
MITT14B	14” B TOOL COVERS PIPE SCHDS XS TO 80 TO 4500 PSI MAX
MITT14C	14” C TOOL COVERS PIPE SCHDS 100 TO 160 TO 4500 PSI MAX
MITT16A	16” A TOOL COVERS PIPE SCHDS 10 TO 60 TO 4500 PSI MAX
MITT16B	16” B TOOL COVERS PIPE SCHDS 80 TO 100 TO 4500 PSI MAX
MITT16C	16” C TOOL COVERS PIPE SCHDS 120 TO 160 TO 4500 PSI MAX
MITT18A	18” A TOOL COVERS PIPE SCHDS 10 TO 40 TO 4500 PSI MAX
MITT18B	18” B TOOL COVERS PIPE SCHDS 60 TO 80 TO 4500 PSI MAX
MITT18C	18” C TOOL COVERS PIPE SCHDS 100 TO 120 TO 4500 PSI MAX
MITT18D	18” D TOOL COVERS PIPE SCHDS 140 TO 160 TO 4500 PSI MAX

Multi Bolt Top Level Assemblies continued

Part Number	Description
MITT20A	20” A TOOL COVERS PIPE SCHDS 10 TO 30 TO 4500 PSI MAX
MITT20B	20” B TOOL COVERS PIPE SCHDS 40 TO 60
MITT20C	20” C TOOL COVERS PIPE SCHDS 80 TO 100
MITT20D	20” D TOOL COVERS PIPE SCHDS 120 TO 140 TO 4500 PSI MAX
MITT20E	20” E TOOL COVERS PIPE SCHD 160
MITT22A	22” A TOOL COVERS PIPE SCHDS STD TO XS TO 4500 PSI MAX
MITT22B	22” B TOOL COVERS PIPE SCHDS 60 TO 80 TO 4500 PSI MAX
MITT22C	22” C TOOL COVERS PIPE SCHDS 100 TO 120 TO 4500 PSI MAX
MITT22D	22” D TOOL COVERS PIPE SCHDS 140 TO 160 TO 4500 PSI MAX
MITT24A	24” A TOOL COVERS PIPE SCHDS 10 TO 30 TO 4500 PSI MAX
MITT24B	24” B TOOL COVERS PIPE SCHDS 40 TO 60 TO 4500 PSI MAX
MITT24C	24” C TOOL COVERS PIPE SCHDS 80 TO 100 TO 4500 PSI MAX
MITT24D	24” D TOOL COVERS PIPE SCHDS 120 TO 140 TO 4500 PSI MAX
MITT24E	24” E TOOL COVERS PIPE SCHD 160
MITT26A	26” A TOOL COVERS PIPE SCHDS 10 TO XS TO 4500 PSI MAX
MITT30A	30” A TOOL COVERS PIPE SCHDS 10 TO 30 TO 4500 PSI MAX
MITT30B	30” B TOOL COVERS PIPE SCHD 40
MITT32A	32” A TOOL COVERS PIPE SCHDS 10 TO 30 TO 4500 PSI MAX
MITT32B	32” B TOOL COVERS PIPE SCHD 40
MITT34A	34” A TOOL COVERS PIPE SCHDS 10 TO 30
MITT34B	34” B TOOL COVERS PIPE SCHD 40
MITT36A	36” A TOOL COVERS PIPE SCHDS 10 TO XS TO 4500 PSI MAX
MITT38A	38” A TOOL COVERS PIPE SCHDS STD TO XS
MITT40A	40” A TOOL COVERS PIPE SCHDS STD TO XS

10.0 REPAIR PARTS LIST

The following components cannot be ordered separately: Top plates, back plates, annular rings, collars, spacers, and mandrels.
Repairs to these components must be completed by an Enerpac Authorized Service Center.
If repairs are not possible, a replacement MITT tool will be required.

10.1 Internal Seal Kits

Part Number	Description
MITT075-1INTSK	INTERNAL SEALS FOR 0.75” THRU 1” TOOLS - SET OF 12
MITT1.25-2INTSK	INTERNAL SEALS FOR 1.25” THRU 2” TOOLS - SET OF 12

10.2 External Seal Kits (Shore 70)

Part Number	Description
MITT075A5SK	0.75" A O-RING SEAL SCH 5 PIPE - SET OF 2
MITT075A10SK	0.75" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT075ASTD-40SK	0.75" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT075BXS-80SK	0.75" A O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT075B160SK	0.75" B O-RING SEAL SCH 160 PIPE - SET OF 2
MITT1A5SK	1" A O-RING SEAL SCH 5 PIPE - SET OF 2
MITT1A10SK	1" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT1ASTD-40SK	1" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT1BXS-80SK	1" B O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT1B160SK	1" B O-RING SEAL SCH 160 PIPE - SET OF 2
MITT125A5SK	1.25" A O-RING SEAL SCH 5 PIPE - SET OF 2
MITT125A10SK	1.25" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT125ASTD-40SK	1.25" A O-RING SEAL S CH STD/40 PIPE - SET OF 2
MITT125AXS-80SK	1.25" A O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT150A5SK	1.50" A O-RING SEAL SCH 5 PIPE - SET OF 2
MITT150A10SK	1.50" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT150ASTD-40SK	1.50" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT150AXS-80SK	1.50" A O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT150B160SK	1.50" B O-RING SEAL SCH 160 PIPE - SET OF 2
MITT2A5SK	2" A O-RING SEAL SCH 5 PIPE - SET OF 2
MITT2A10SK	2" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT2ASTD-40SK	2" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT2AXS-80SK	2" A O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT2B160SK	2" B O-RING SEAL SCH 160 PIPE - SET OF 2
MITT2BXXSSK	2" B O-RING SEAL SCH XXS PIPE - SET OF 2
MITT3A5SK	3" A O-RING SEAL SCH 5 PIPE - SET OF 2
MITT3A10SK	3" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT3ASTD-40SK	3" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT3AXS-80SK	3" A O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT3B160SK	3" B O-RING SEAL SCH 160 PIPE - SET OF 2
MITT3BXXSSK	3" B O-RING SEAL SCH XXS PIPE - SET OF 2

External Seal Kits (Shore 70) - continued

Part Number	Description
MITT4A5SK	4" A O-RING SEAL SCH 5 PIPE - SET OF 2
MITT4A10SK	4" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT4ASTD-40SK	4" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT4A60SK	4" A O-RING SEAL SCH 60 PIPE - SET OF 2
MITT4AXS-80SK	4" A O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT4B120SK	4" B O-RING SEAL SCH 120 PIPE - SET OF 2
MITT4B160SK	4" B O-RING SEAL SCH 160 PIPE - SET OF 2
MITT4CXXSSK	4" C O-RING SEAL SCH XXS PIPE - SET OF 2
MITT6A10SK	6" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT6ASTD-40SK	6" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT6BXS-80SK	6" B O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT6B120SK	6" B O-RING SEAL SCH 120 PIPE - SET OF 2
MITT6C160SK	6" C O-RING SEAL SCH 160 PIPE - SET OF 2
MITT6CXXSSK	6" C O-RING SEAL SCH XXS PIPE - SET OF 2
MITT8A10SK	8" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT8A20SK	8" A O-RING SEAL SCH 20 PIPE - SET OF 2
MITT8A30SK	8" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT8ASTD-40SK	8" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT8A60SK	8" A O-RING SEAL SCH 60 PIPE - SET OF 2
MITT8AXS-80SK	8" A O-RING SEAL SCH XS/80 PIPE - SET OF 2
MITT8B100SK	8" B O-RING SEAL SCH 100 PIPE - SET OF 2
MITT8B120SK	8" B O-RING SEAL SCH 120 PIPE - SET OF 2
MITT8B140SK	8" B O-RING SEAL SCH 140 PIPE - SET OF 2
MITT8BXXSSK	8" B O-RING SEAL SCH XXS PIPE - SET OF 2
MITT8B160SK	8" B O-RING SEAL SCH 160 PIPE - SET OF 2
MITT10A20SK	10" A O-RING SEAL SCH 20 PIPE - SET OF 2
MITT10A30SK	10" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT10ASTD-40SK	10" A O-RING SEAL SCH STD/40 PIPE - SET OF 2
MITT10AXS-60SK	10" A O-RING SEAL SCH XS / 60 PIPE - SET OF 2
MITT10A80SK	10" A O-RING SEAL SCH 80 PIPE - SET OF 2
MITT10B100SK	10" B O-RING SEAL SCH 100 PIPE - SET OF 2
MITT10B120SK	10" B O-RING SEAL SCH 120 PIPE - SET OF 2
MITT10BXXS-140SK	10" B O-RING SEAL SCH XXS/140 PIPE - SET OF 2
MITT10B160SK	10" B O-RING SEAL SCH 160 PIPE - SET OF 2

External Seal Kits (Shore 70) - continued

Part Number	Description
MITT12A10SK	12" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT12A20SK	12" A O-RING SEAL SCH 20 PIPE - SET OF 2
MITT12A30SK	12" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT12ASTDSK	12" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT12A40SK	12" A O-RING SEAL SCH 40 PIPE - SET OF 2
MITT12AXSSK	12" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT12B60SK	12" B O-RING SEAL SCH 60 PIPE - SET OF 2
MITT12B80SK	12" B O-RING SEAL SCH 80 PIPE - SET OF 2
MITT12B100SK	12" B O-RING SEAL SCH 100 PIPE - SET OF 2
MITT12BXXS-120SK	12" B O-RING SEAL SCH XXS/120 PIPE - SET OF 2
MITT12C140SK	12" C O-RING SEAL SCH 140 PIPE - SET OF 2
MITT12C160SK	12" C O-RING SEAL SCH 160 PIPE - SET OF 2
MITT14A10SK	14" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT14A20SK	14" A O-RING SEAL SCH 20 PIPE - SET OF 2
MITT14ASTD-30SK	14" A O-RING SEAL SCH STD/30 PIPE - SET OF 2
MITT14A40SK	14" A O-RING SEAL SCH 40 PIPE - SET OF 2
MITT14BXSSK	14" B O-RING SEAL SCH XS PIPE - SET OF 2
MITT14B60SK	14" B O-RING SEAL SCH 60 PIPE - SET OF 2
MITT14B80SK	14" B O-RING SEAL SCH 80 PIPE - SET OF 2
MITT14C100SK	14" C O-RING SEAL SCH 100 PIPE - SET OF 2
MITT14C120SK	14" C O-RING SEAL SCH 120 PIPE - SET OF 2
MITT14C140SK	14" C O-RING SEAL SCH 140 PIPE - SET OF 2
MITT14C160SK	14" C O-RING SEAL SCH 160 PIPE - SET OF 2
MITT16A10SK	16" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT16A20SK	16" A O-RING SEAL SCH 20 PIPE - SET OF 2
MITT16ASTD-30SK	16" A O-RING SEAL SCH STD/30 PIPE - SET OF 2
MITT16AXS-40SK	16" A O-RING SEAL SCH XS/40 PIPE - SET OF 2
MITT16AXSSK	16" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT16A60SK	16" A O-RING SEAL SCH 60 PIPE - SET OF 2
MITT16B80SK	16" B O-RING SEAL SCH 80 PIPE - SET OF 2
MITT16B100SK	16" B O-RING SEAL SCH 100 PIPE - SET OF 2
MITT16C120SK	16" C O-RING SEAL SCH 120 PIPE - SET OF 2
MITT16C140SK	16" C O-RING SEAL SCH 140 PIPE - SET OF 2
MITT16C160SK	16" C O-RING SEAL SCH 160 PIPE - SET OF 2

External Seal Kits (Shore 70) - continued

Part Number	Description
MITT18A10SK	18" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT18A20SK	18" A O-RING SEAL SCH 20 PIPE - SET OF 2
MITT18ASTDSK	18" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT18A30SK	18" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT18AXSSK	18" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT18A40SK	18" A O-RING SEAL SCH 40 PIPE - SET OF 2
MITT18B60SK	18" B O-RING SEAL SCH 60 PIPE - SET OF 2
MITT18B80SK	18" B O-RING SEAL SCH 80 PIPE - SET OF 2
MITT18C100SK	18" C O-RING SEAL SCH 100 PIPE - SET OF 2
MITT18C120SK	18" C O-RING SEAL SCH 120 PIPE - SET OF 2
MITT18D140SK	18" D O-RING SEAL SCH 140 PIPE - SET OF 2
MITT18D160SK	18" D O-RING SEAL SCH 160 PIPE - SET OF 2
MITT20A10SK	20" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT20ASTD-20 SK	20" A O-RING SEAL SCH STD/20 PIPE - SET OF 2
MITT20AXS-30SK	20" A O-RING SEAL SCH XS/30 PIPE - SET OF 2
MITT20B40SK	20" B O-RING SEAL SCH 40 PIPE - SET OF 2
MITT20B60SK	20" B O-RING SEAL SCH 60 PIPE - SET OF 2
MITT20C80SK	20" C O-RING SEAL SCH 80 PIPE - SET OF 2
MITT20C100SK	20" C O-RING SEAL SCH 100 PIPE - SET OF 2
MITT20D120SK	20" D O-RING SEAL SCH 120 PIPE - SET OF 2
MITT20D140SK	20" D O-RING SEAL SCH 140 PIPE - SET OF 2
MITT20E160SK	20" E O-RING SEAL SCH 160 PIPE - SET OF 2
MITT22ASTDSK	22" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT22AXSSK	22" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT22B60SK	22" B O-RING SEAL SCH 60 PIPE - SET OF 2
MITT22B80SK	22" B O-RING SEAL SCH 80 PIPE - SET OF 2
MITT22C100SK	22" C O-RING SEAL SCH 100 PIPE - SET OF 2
MITT22C120SK	22" C O-RING SEAL SCH 120 PIPE - SET OF 2
MITT22D140SK	22" D O-RING SEAL SCH 140 PIPE - SET OF 2
MITT22D160SK	22" D O-RING SEAL SCH 160 PIPE - SET OF 2
MITT24A10SK	24" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT24ASTD-20 SK	24" A O-RING SEAL SCH STD/20 PIPE - SET OF 2
MITT24AXSSK	24" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT24A30SK	24" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT24B40SK	24" B O-RING SEAL SCH 40 PIPE - SET OF 2
MITT24B60SK	24" B O-RING SEAL SCH 60 PIPE - SET OF 2
MITT24C80SK	24" C O-RING SEAL SCH 80 PIPE - SET OF 2
MITT24C100SK	24" C O-RING SEAL SCH 100 PIPE - SET OF 2
MITT24D120SK	24" D O-RING SEAL SCH 120 PIPE - SET OF 2
MITT24D140SK	24" D O-RING SEAL SCH 140 PIPE - SET OF 2
MITT24E160SK	24" E O-RING SEAL SCH 160 PIPE - SET OF 2

External Seal Kits (Shore 70) - continued

Part Number	Description
MITT26A10SK	26" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT26ASTDSK	26" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT26AXSSK	26" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT30A10SK	30" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT30ASTDSK	30" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT30AXS-20SK	30" A O-RING SEAL SCH XS/20 PIPE - SET OF 2
MITT30A30SK	30" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT30B40SK	30" B O-RING SEAL SCH 40 PIPE - SET OF 2
MITT32A10SK	32" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT32ASTDSK	32" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT32AXS-20SK	32" A O-RING SEAL SCH XS/20 PIPE - SET OF 2
MITT32A30SK	32" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT32B40SK	32" A O-RING SEAL SCH 40 PIPE - SET OF 2
MITT34A10SK	34" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT34ASTDSK	34" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT34AXS-20SK	34" A O-RING SEAL SCH XS/20 PIPE - SET OF 2
MITT34A30SK	34" A O-RING SEAL SCH 30 PIPE - SET OF 2
MITT34B40SK	34" B O-RING SEAL SCH 40 PIPE - SET OF 2
MITT36A10SK	36" A O-RING SEAL SCH 10 PIPE - SET OF 2
MITT36ASTDSK	36" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT36AXSSK	36" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT38ASTDSK	38" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT38AXSSK	38" A O-RING SEAL SCH XS PIPE - SET OF 2
MITT40ASTDSK	40" A O-RING SEAL SCH STD PIPE - SET OF 2
MITT40AXSSK	40" A O-RING SEAL SCH XS PIPE - SET OF 2

10.3 Seal Backing Ring Kits

Part Number	Description
MITT075A5BR	3/4" A BACKING RING SCH 5 PIPE - SET OF 2
MITT075A10BR	3/4" A BACKING RING SCH 10 PIPE - SET OF 2
MITT075ASTD - 40BR	3/4" A BACKING RING SCH STD / 40 PIPE - SET OF 2
MITT075BXS - 80BR	3/4" B BACKING RING SCH XS / 80 PIPE - SET OF 2
MITT075B160BR	3/4" B BACKING RING SCH 160 PIPE - SET OF 2
MITT1A5BR	1" A BACKING RING SCH 5 PIPE - SET OF 2
MITT1A10BR	1" A BACKING RING SCH 10 PIPE - SET OF 2
MITT1ASTD - 40BR	1" A BACKING RING SCH STD / 40 PIPE - SET OF 2
MITT1BXS - 80BR	1" B BACKING RING SCH XS / 80 PIPE - SET OF 2
MITT1B160BR	1" B BACKING RING SCH 160 PIPE - SET OF 2
MITT125A5BR	1-1/4" A BACKING RING SCH 5 PIPE - SET OF 2
MITT125A10BR	1-1/4" A BACKING RING SCH 10 PIPE - SET OF 2
MITT125ASTD - 40BR	1-1/4" A BACKING RING SCH STD / 40 PIPE - SET OF 2
MITT125AXS - 80BR	1-1/4" A BACKING RING SCH XS / 80 PIPE - SET OF 2
MITT150A5BR	1-1/2" A BACKING RING SCH 5 PIPE - SET OF 2
MITT150A10BR	1-1/2" A BACKING RING SCH 10 PIPE - SET OF 2
MITT150ASTD - 40BR	1-1/2" A BACKING RING SCH STD / 40 PIPE - SET OF 2
MITT150AXS - 80BR	1-1/2" A BACKING RING SCH XS / 80 PIPE - SET OF 2
MITT150B160BR	1-1/2" B BACKING RING SCH 160 PIPE - SET OF 2
MITT2A5BR	2" A BACKING RING SCH 5 PIPE - SET OF 2
MITT2A10BR	2" A BACKING RING SCH 10 PIPE - SET OF 2
MITT2ASTD - 40BR	2" A BACKING RING SCH STD / 40 PIPE - SET OF 2
MITT2AXS - 80BR	2" A BACKING RING SCH XS / 80 PIPE - SET OF 2
MITT2B160BR	2" B BACKING RING SCH 160 PIPE - SET OF 2
MITT2BXXSBR	2" B BACKING RING SCH XXS PIPE - SET OF 2
MITT3A5BR	3" A BACKING RING SCH 5 PIPE - SET OF 2
MITT3A10BR	3" A BACKING RING SCH 10 PIPE - SET OF 2
MITT3ASTD - 40BR	3" A BACKING RING SCH STD / 40 PIPE - SET OF 2
MITT3AXS - 80BR	3" A BACKING RING SCH XS / 80 PIPE - SET OF 2
MITT3B160BR	3" B BACKING RING SCH 160 PIPE - SET OF 2
MITT3BXXSBR	3" B BACKING RING SCH XXS PIPE - SET OF 2

Seal Backing Ring Kits - continued

Part Number	Description
MITT4A5BR	4" A BACKING RING SCH 5 PIPE - SET OF 2
MITT4A10BR	4" A BACKING RING SCH 10 PIPE - SET OF 2
MITT4ASTD - 40BR	4" A BACKING RING SCH STD / 40 PIPE - SET OF 2
MITT4A60BR	4" A BACKING RING SCH 60 PIPE - SET OF 2
MITT4AXS - 80BR	4" A BACKING RING SCH XS / 80 PIPE - SET OF 2
MITT4B120BR	4" B BACKING RING SCH 120 PIPE - SET OF 2
MITT4B160BR	4" B BACKING RING SCH 160 PIPE - SET OF 2
MITT4CXXSBR	4" C BACKING RING SCH XXS PIPE - SET OF 2
MITT6A10BR	6" A BACKING RING SCH 10 PIPE - SET OF 2
MITT6ASTD-40BR	6" A BACKING RING SCH STD/40 PIPE - SET OF 2
MITT6BXS-80BR	6" B BACKING RING SCH XS/80 PIPE - SET OF 2
MITT6B120BR	6" B BACKING RING SCH 120 PIPE - SET OF 2
MITT6C160BR	6" C BACKING RING SCH 160 PIPE - SET OF 2
MITT6CXXSBR	6" C BACKING RING SCH XXS PIPE - SET OF 2
MITT8A10BR	8" A BACKING RING SCH 10 PIPE - SET OF 2
MITT8A20BR	8" A BACKING RING SCH 20 PIPE - SET OF 2
MITT8A30BR	8" A BACKING RING SCH 30 PIPE - SET OF 2
MITT8ASTD-40BR	8" A BACKING RING SCH STD/40 PIPE - SET OF 2
MITT8A60BR	8" A BACKING RING SCH 60 PIPE - SET OF 2
MITT8AXS-80BR	8" A BACKING RING SCH XS/80 PIPE - SET OF 2
MITT8B100BR	8" B BACKING RING SCH 100 PIPE - SET OF 2
MITT8B120BR	8" B BACKING RING SCH 120 PIPE - SET OF 2
MITT8B140BR	8" B BACKING RING SCH 140 PIPE - SET OF 2
MITT8BXXSBR	8" B BACKING RING SCH XXS PIPE - SET OF 2
MITT8B160BR	8" B BACKING RING SCH 160 PIPE - SET OF 2
MITT10A20BR	10" A BACKING RING SCH 20 PIPE - SET OF 2
MITT10A30BR	10" A BACKING RING SCH 30 PIPE - SET OF 2
MITT10ASTD-40BR	10" A BACKING RING SCH STD/40 PIPE - SET OF 2
MITT10AXS - 60BR	10" A BACKING RING SCH XS / 60 PIPE - SET OF 2
MITT10A80BR	10" A BACKING RING SCH 80 PIPE - SET OF 2
MITT10B100BR	10" B BACKING RING SCH 100 PIPE - SET OF 2
MITT10B120BR	10" B BACKING RING SCH 120 PIPE - SET OF 2
MITT10BXXS-140BR	10" B BACKING RING SCH XXS/140 PIPE - SET OF 2
MITT10B160BR	10" B BACKING RING SCH 160 PIPE - SET OF 2

Seal Backing Ring Kits - continued

Part Number	Description
MITT12A10BR	12" A BACKING RING SCH 10 PIPE - SET OF 2
MITT12A20BR	12" A BACKING RING SCH 20 PIPE - SET OF 2
MITT12A30BR	12" A BACKING RING SCH 30 PIPE - SET OF 2
MITT12ASTDBR	12" A BACKING RING SCH STD PIPE - SET OF 2
MITT12A40BR	12" A BACKING RING SCH 40 PIPE - SET OF 2
MITT12AXSBR	12" A BACKING RING SCH XS PIPE - SET OF 2
MITT12B60BR	12" B BACKING RING SCH 60 PIPE - SET OF 2
MITT12B80BR	12" B BACKING RING SCH 80 PIPE - SET OF 2
MITT12B100BR	12" B BACKING RING SCH 100 PIPE - SET OF 2
MITT12BXXS-120BR	12" B BACKING RING SCH XXS/120 PIPE - SET OF 2
MITT12C140BR	12" C BACKING RING SCH 140 PIPE - SET OF 2
MITT12C160BR	12" C BACKING RING SCH 160 PIPE - SET OF 2
MITT14A10BR	14" A BACKING RING SCH 10 PIPE - SET OF 2
MITT14A20BR	14" A BACKING RING SCH 20 PIPE - SET OF 2
MITT14ASTD-30BR	14" A BACKING RING SCH STD/30 PIPE - SET OF 2
MITT14A40BR	14" A BACKING RING SCH 40 PIPE - SET OF 2
MITT14BXSBR	14" B BACKING RING SCH XS PIPE - SET OF 2
MITT14B60BR	14" B BACKING RING SCH 60 PIPE - SET OF 2
MITT14B80BR	14" B BACKING RING SCH 80 PIPE - SET OF 2
MITT14C100BR	14" C BACKING RING SCH 100 PIPE - SET OF 2
MITT14C120BR	14" C BACKING RING SCH 120 PIPE - SET OF 2
MITT14C140BR	14" C BACKING RING SCH 140 PIPE - SET OF 2
MITT14C160BR	14" C BACKING RING SCH 160 PIPE - SET OF 2
MITT16A10BR	16" A BACKING RING SCH 10 PIPE - SET OF 2
MITT16A20BR	16" A BACKING RING SCH 20 PIPE - SET OF 2
MITT16ASTD-30BR	16" A BACKING RING SCH STD/30 PIPE - SET OF 2
MITT16AXS-40BR	16" A BACKING RING SCH XS/40 PIPE - SET OF 2
MITT16AXSBR	16" A BACKING RING SCH XS PIPE - SET OF 2
MITT16A60BR	16" A BACKING RING SCH 60 PIPE - SET OF 2
MITT16B80BR	16" B BACKING RING SCH 80 PIPE - SET OF 2
MITT16B100BR	16" B BACKING RING SCH 100 PIPE - SET OF 2
MITT16C120BR	16" C BACKING RING SCH 120 PIPE - SET OF 2
MITT16C140BR	16" C BACKING RING SCH 140 PIPE - SET OF 2
MITT16C160BR	16" C BACKING RING SCH 160 PIPE - SET OF 2

Seal Backing Ring Kits - continued

Part Number	Description
MITT18A10BR	18" A BACKING RING SCH 10 PIPE - SET OF 2
MITT18A20BR	18" A BACKING RING SCH 20 PIPE - SET OF 2
MITT18ASTDBR	18" A BACKING RING SCH STD PIPE - SET OF 2
MITT18A30BR	18" A BACKING RING SCH 30 PIPE - SET OF 2
MITT18AXSBR	18" A BACKING RING SCH XS PIPE - SET OF 2
MITT18A40BR	18" A BACKING RING SCH 40 PIPE - SET OF 2
MITT18B60BR	18" B BACKING RING SCH 60 PIPE - SET OF 2
MITT18B80BR	18" B BACKING RING SCH 80 PIPE - SET OF 2
MITT18C100BR	18" C BACKING RING SCH 100 PIPE - SET OF 2
MITT18C120BR	18" C BACKING RING SCH 120 PIPE - SET OF 2
MITT18D140BR	18" D BACKING RING SCH 140 PIPE - SET OF 2
MITT18D160BR	18" D BACKING RING SCH 160 PIPE - SET OF 2
MITT20A10BR	20" A BACKING RING SCH 10 PIPE - SET OF 2
MITT20ASTD-20 BR	20" A BACKING RING SCH STD/20 PIPE - SET OF 2
MITT20AXS-30BR	20" A BACKING RING SCH XS/30 PIPE - SET OF 2
MITT20B40BR	20" B BACKING RING SCH 40 PIPE - SET OF 2
MITT20B60BR	20" B BACKING RING SCH 60 PIPE - SET OF 2
MITT20C80BR	20" C BACKING RING SCH 80 PIPE - SET OF 2
MITT20C100BR	20" C BACKING RING SCH 100 PIPE - SET OF 2
MITT20D120BR	20" D BACKING RING SCH 120 PIPE - SET OF 2
MITT20D140BR	20" D BACKING RING SCH 140 PIPE - SET OF 2
MITT20E160BR	20" E BACKING RING SCH 160 PIPE - SET OF 2
MITT22ASTDBR	22" A BACKING RING SCH STD PIPE - SET OF 2
MITT22AXSBR	22" A BACKING RING SCH XS PIPE - SET OF 2
MITT22B60BR	22" B BACKING RING SCH 60 PIPE - SET OF 2
MITT22B80BR	22" B BACKING RING SCH 80 PIPE - SET OF 2
MITT22C100BR	22" C BACKING RING SCH 100 PIPE - SET OF 2
MITT22C120BR	22" C BACKING RING SCH 120 PIPE - SET OF 2
MITT22D140BR	22" D BACKING RING SCH 140 PIPE - SET OF 2
MITT22D160BR	22" D BACKING RING SCH 160 PIPE - SET OF 2
MITT24A10BR	24" A BACKING RING SCH 10 PIPE - SET OF 2
MITT24ASTD-20 BR	24" A BACKING RING SCH STD/20 PIPE - SET OF 2
MITT24AXSBR	24" A BACKING RING SCH XS PIPE - SET OF 2
MITT24A30BR	24" A BACKING RING SCH 30 PIPE - SET OF 2
MITT24B40BR	24" B BACKING RING SCH 40 PIPE - SET OF 2
MITT24B60BR	24" B BACKING RING SCH 60 PIPE - SET OF 2
MITT24C80BR	24" C BACKING RING SCH 80 PIPE - SET OF 2
MITT24C100BR	24" C BACKING RING SCH 100 PIPE - SET OF 2
MITT24D120BR	24" D BACKING RING SCH 120 PIPE - SET OF 2
MITT24D140BR	24" D BACKING RING SCH 140 PIPE - SET OF 2
MITT24E160BR	24" E BACKING RING SCH 160 PIPE - SET OF 2

Seal Backing Ring Kits - continued

Part Number	Description
MITT26A10BR	26" A BACKING RING SCH 10 PIPE - SET OF 2
MITT26ASTDBR	26" A BACKING RING SCH STD PIPE - SET OF 2
MITT26AXSBR	26" A BACKING RING SCH XS PIPE - SET OF 2
MITT30A10BR	30" A BACKING RING SCH 10 PIPE - SET OF 2
MITT30ASTDBR	30" A BACKING RING SCH STD PIPE - SET OF 2
MITT30AXS-20BR	30" A BACKING RING SCH XS/20 PIPE - SET OF 2
MITT30A30BR	30" A BACKING RING SCH 30 PIPE - SET OF 2
MITT30B40BR	30" B BACKING RING SCH 40 PIPE - SET OF 2
MITT32A10BR	32" A BACKING RING SCH 10 PIPE - SET OF 2
MITT32ASTDBR	32" A BACKING RING SCH STD PIPE - SET OF 2
MITT32AXS-20BR	32" A BACKING RING SCH XS/20 PIPE - SET OF 2
MITT32A30BR	32" A BACKING RING SCH 30 PIPE - SET OF 2
MITT32B40BR	32" A BACKING RING SCH 40 PIPE - SET OF 2
MITT34A10BR	34" A BACKING RING SCH 10 PIPE - SET OF 2
MITT34ASTDBR	34" A BACKING RING SCH STD PIPE - SET OF 2
MITT34AXS-20BR	34" A BACKING RING SCH XS/20 PIPE - SET OF 2
MITT34A30BR	34" A BACKING RING SCH 30 PIPE - SET OF 2
MITT34B40BR	34" B BACKING RING SCH 40 PIPE - SET OF 2
MITT36A10BR	36" A BACKING RING SCH 10 PIPE - SET OF 2
MITT36ASTDBR	36" A BACKING RING SCH STD PIPE - SET OF 2
MITT36AXSBR	36" A BACKING RING SCH XS PIPE - SET OF 2
MITT38ASTDBR	38" A BACKING RING SCH STD PIPE - SET OF 2
MITT38AXSBR	38" A BACKING RING SCH XS PIPE - SET OF 2
MITT40ASTDBR	40" A BACKING RING SCH STD PIPE - SET OF 2
MITT40AXSBR	40" A BACKING RING SCH XS PIPE - SET OF 2

10.4 Ancillary Kit

Part Number	Description
MITTAK	ANCILLARIES KIT FOR MITT SERIES TOOLS (W/O PUMP)

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11.0 APPENDIX A - TOOL AND STANDARD PRESSURE GUIDE

Key to Table Symbols

BN 70: Buna Nitrile, Shore Hardness 70 Seals

SB: Seal Backing Rings

BN 90: Buna Nitrile, Shore Hardness 90 Seals

√: Required

√√: Two sets are required

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
0.75	5	0.065	MITT075 A	√	√		√	√			√	√
			MITT1B	√	√		√	√			√	√
	10	0.083	MITT075A	√			√	√		√	√	
			MITT1B	√			√	√		√	√	
	STD/40	0.113	MITT075A	√			√			√	√	
			MITT1B	√			√			√	√	
	XS/80	0.154	MITT075B	√					√			√
			MITT075A	√			√			√		
			MITT1B	√			√			√		
	160	0.219	MITT075B	√			√			√		
1	5	0.065	MITT1A	√			√			√	√	
			MITT125A	√			√			√		
			MITT150B	√			√			√		
	10	0.109	MITT1A	√			√			√	√	
	STD/40	0.133	MITT1A	√			√			√	√	
	XS/80	0.179	MITT1B	√	√		√	√		√	√	
			MITT075A	√	√		√	√		√	√	
	160	0.250	MITT1B	√			√			√	√	
			MITT075A	√			√			√	√	
1.25	5	0.065	MITT125A	√	√		√	√		√	√	
			MITT150A	√			√			√		
	10	0.109	MITT125A	√			√	√		√	√	
			MITT150A	√			√			√		
			MITT150B	√			√	√		√	√	
	STD/40	0.140	MITT125A	√			√			√	√	
			MITT1A	√	√		√	√		√	√	
			MITT150B	√			√			√	√	
	XS/80	0.191	MITT125A	√			√			√		
			MITT1A	√			√	√		√	√	
			MITT150B	√			√			√	√	
	160	0.250	MITT125A	√			√			√		

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
	√	√	N/A			MITT075A5SK	MITT075A5BR	MITT075A5-90SK
	√	√	N/A			MITT1B-075-5SK	MITT1B-075-5BR	MITT1B-075-5-90SK
√	√		N/A			MITT075A10SK	MITT075A10BR	MITT075A10-90SK
√	√		N/A			MITT1B-075-10SK	MITT1B-075-10BR	MITT1B-075-10-90SK
√	√			√	√	MITT075ASTD-40SK	MITT075ASTD-40BR	MITT075ASTD-40-90SK
√	√			√	√	MITT1B-075-STD-40SK	MITT1B-075-STD-40BR	MITT1B-075-STD-40-90SK
		√			√	MITT075BXS-80SK	MITT075BXS-80BR	MITT075BXS-80-90SK
√					√	MITT075AXS-80SK	MITT075AXS-80BR	MITT075AXS-80-90SK
√					√	MITT1B-075-XS-80SK	MITT1B-075-XS-80BR	MITT1B-075-XS-80-90SK
√			√			MITT075B160SK	MITT075B160BR	MITT075B160-90SK
N/A			N/A			MITT1A5SK	MITT1A5BR	MITT1A5-90SK
N/A			N/A			MITT125A-1-5SK	MITT125A-1-5BR	MITT125A-1-5-90SK
N/A			N/A			MITT150B-1-5SK	MITT150B-1-5BR	MITT150B-1-5-90SK
√	√		N/A			MITT1A10SK	MITT1A10BR	MITT1A10-90SK
√	√√			√	√	MITT1ASTD-40SK	MITT1ASTD-40BR	MITT1ASTD-40-90SK
√	√√			√√	√	MITT1BXS-80SK	MITT1BXS-80BR	MITT1BXS-80-90SK
√	√√			√√	√	MITT075A-1-XS-80SK	MITT075A-1-XS-80BR	MITT075A-1-XS-80-90SK
√	√		√	√		MITT1B160SK	MITT1B160BR	MITT1B160-90SK
√	√		√	√		MITT075A-1-160SK	MITT075A-1-160BR	MITT075A-1-160-90SK
N/A			N/A			MITT125A5SK	MITT125A5BR	MITT125A5-90SK
N/A			N/A			MITT150A-125-5SK	MITT150A-125-5BR	MITT150A-125-5-90SK
√	√√		N/A			MITT125A10SK	MITT125A10BR	MITT125A10-90SK
√			N/A			MITT150A-125-10SK	MITT150A-125-10BR	MITT150A-125-10-90SK
√	√√		N/A			MITT150B-125-10SK	MITT150B-125-10BR	MITT150B-125-10-90SK
√	√		N/A			MITT125ASTD-40SK	MITT125ASTD-40BR	MITT125ASTD-40-90SK
√	√√		N/A			MITT1A-125-STD-40SK	MITT1A-125-STD-40BR	MITT1A-125-STD-40-90SK
√	√		N/A			MITT150B-125-STD-40SK	MITT150B-125-STD-40BR	MITT150B-125-STD-40-90SK
√				√	√	MITT125AXS-80SK	MITT125AXS-80BR	MITT125AXS-80-90SK
√	√√			√√	√	MITT1A-125-XS-80SK	MITT1A-125-XS-80BR	MITT1A-125-XS-80-90SK
√	√			√	√	MITT150B-125-XS-80SK	MITT150B-125-XS-80BR	MITT150B-125-XS-80-90SK
√			√			MITT125A-160SK	MITT125A-160BR	MITT125A-160-90SK

Tool and Standard Pressure Guide continued

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
1.5	5	0.065	MITT150A	√			√	√		N/A		
			MITT2B	√			√			N/A		
	10	0.109	MITT150A	√			√			√	√	
			MITT2B	√			√			√		
	STD/40	0.145	MITT150A	√			√			√		
			MITT150B	√	√		√	√		√	√	
			MITT2B	√			√			√		
	XS/80	0.200	MITT150A	√			√			√		
			MITT125A	√	√		√	√		√	√	
			MITT2B	√			√			√		
	160	0.281	MITT150B	√			√			√	√	
			MITT1A	√			√	√		√	√	
			MITT125A	√			√			√		
2	5	0.065	MITT2A	√			√	√		N/A		
	10	0.109	MITT2A	√			√			N/A		
	STD/40	0.154	MITT2A	√			√			√		
			MITT150A	√	√		√	√			√√	√
	XS/80	0.218	MITT2A	√			√			√		
			MITT150A	√			√	√		√	√	
			MITT2B	√			√			√	√	
	160	0.344	MITT2B	√			√			√	√	
			MITT150A	√			√			√	√	
	XX	0.436	MITT2B	√			√			√		
			MITT125A	√	√		√	√		√	√	
			MITT150A	√			√			√		
			MITT150B	√	√		√	√		√	√√	
2.5	10	0.120	MITT3B	√			√	√		N/A		
	STD/40	0.203	MITT3B	√			√			√		
	XS/80	0.276	MITT3B	√			√			√		
	160	0.375	MITT2A	√			√			√	√	
3	5	0.083	MITT3A	√			√	√		N/A		
			MITT4B	√			√			N/A		
			MITT4C	√			√			N/A		
	10	0.120	MITT3A	√			√	√		N/A		
			MITT4B	√			√			N/A		
			MITT4C	√			√			N/A		
	STD/40	0.216	MITT3A	√			√			√	√	
	XS/80	0.300	MITT3A	√			√			√		
			MITT3B	√			√	√		√	√	
	160	0.437	MITT3B	√			√			√		
	XX	0.600	MITT3B	√			√			√		

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
N/A			N/A			MITT150A5SK	MITT150A5BR	MITT150A5-90SK
N/A			N/A			MITT2B-150-5SK	MITT2B-150-5BR	MITT2B-150-5-90SK
N/A			N/A			MITT150A10SK	MITT150A10BR	MITT150A10-90SK
N/A			N/A			MITT2B-150-10SK	MITT2B-150-10BR	MITT2B-150-10-90SK
√	√		N/A			MITT150ASTD-40SK	MITT150ASTD-40BR	MITT150ASTD-40-90SK
√	√√		N/A			MITT150BSTD-40SK	MITT150BSTD-40BR	MITT150BSTD-40-90SK
√			N/A			MITT2B-150-STD-40SK	MITT2B-150-STD-40BR	MITT2B-150-STD-40-90SK
√					√	MITT150AXS-80SK	MITT150AXS-80BR	MITT150AXS-80-90SK
√	√√			√√	√	MITT125A-150-XS-80SK	MITT125A-150-XS-80BR	MITT125A-150-XS-80-90SK
√					√	MITT2B-150-XS-80SK	MITT2B-150-XS-80BR	MITT2B-150-XS-80-90SK
√	√			√	√	MITT150B160SK	MITT150B160BR	MITT150B160-90SK
√	√√			√√	√	MITT1A-150-160SK	MITT1A-150-160BR	MITT1A-150-160-90SK
√	√			√	√	MITT125A-150-160SK	MITT125A-150-160BR	MITT125A-150-160-90SK
N/A			N/A			MITT2A5SK	MITT2A5BR	MITT2A5-90SK
N/A			N/A			MITT2A10SK	MITT2A10BR	MITT2A10-90SK
N/A			N/A			MITT2ASTD-40SK	MITT2ASTD-40BR	MITT2ASTD-40-90SK
N/A			N/A			MITT150A-2-STD-40SK	MITT150A-2-STD-40BR	MITT150A-2-STD-40-90SK
√			N/A			MITT2AXS-80SK	MITT2AXS-80BR	MITT2AXS-80-90SK
	√	√	N/A			MITT150A-2-XS-80SK	MITT150A-2-XS-80BR	MITT150A-2-XS-80-90SK
	√	√	N/A			MITT2BXS-80SK	MITT2BXS-80BR	MITT2BXS-80-90SK
√	√				√	MITT2B160SK	MITT2B160BR	MITT2B160-90SK
√	√			√	√	MITT150A-2-160SK	MITT150A-2-160BR	MITT150A-2-160-90SK
√					√	MITT2BXXSSK	MITT2BXXSBR	MITT2BXXS-90SK
√	√√			√√	√	MITT125A-2-XXSSK	MITT125A-2-XXSBR	MITT125A-2-XXS-90SK
√	√		√	√		MITT150A-2-XXSSK	MITT150A-2-XXSBR	MITT150A-2-XXS-90SK
√	√√		√	√√		MITT150B-2-XXSSK	MITT150B-2-XXSBR	MITT150B-2-XXS-90SK
N/A			N/A			MITT3B-250-10SK	MITT3B-250-10BR	MITT3B-250-10-90SK
N/A			N/A			MITT3B-250-STD-40SK	MITT3B-250-STD-40BR	MITT3B-250-STD-40-90SK
√			N/A			MITT3B-250-XS-80SK	MITT3B-250-XS-80BR	MITT3B-250-XS-80-90SK
√	√			√	√	MITT2A-250-160SK	MITT2A-250-160BR	MITT2A-250-160-90SK
N/A			N/A			MITT3A5SK	MITT3A5BR	MITT3A5-90SK
N/A			N/A			MITT4B-3-5SK	MITT4B-3-5BR	MITT4B-3-5-90SK
N/A			N/A			MITT4C-3-5SK	MITT4C-3-5BR	MITT4C-3-5-90SK
N/A			N/A			MITT3A10SK	MITT3A10BR	MITT3A10-90SK
N/A			N/A			MITT4B-3-10SK	MITT4B-3-10BR	MITT4B-3-10-90SK
N/A			N/A			MITT4C-3-10SK	MITT4C-3-10BR	MITT4C-3-10-90SK
√	√		N/A			MITT3ASTD-40SK	MITT3ASTD-40BR	MITT3ASTD-40-90SK
√			N/A			MITT3AXS-80SK	MITT3AXS-80BR	MITT3AXS-80-90SK
√	√		N/A			MITT3BXS-80SK	MITT3BXS-80BR	MITT3BXS-80-90SK
√	√		√	√		MITT3B160SK	MITT3B160BR	MITT3B160-90SK
√					√	MITT3BXXSSK	MITT3BXXSBR	MITT3BXXS-90SK

Tool and Standard Pressure Guide continued

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
4	5	0.083	MITT4A	√			N/A			N/A		
	10	0.120	MITT4A	√			√			N/A		
	STD/40	0.237	MITT4A	√			√			√		
	60	0.281	MITT4A	√			√			√		
			MITT4B	√			√	√		√	√	
	XS/80	0.337	MITT4A	√			√			√		
			MITT4B	√			√			√	√	
			MITT4C	√			√			√	√	
	120	0.438	MITT4B	√			√			√		
			MITT4C	√			√			√		
	160	0.531	MITT4B	√			√			√		
			MITT4C	√			√	√		√	√	
	XX	0.674	MITT4C	√			√			√		
5	5	0.109	MITT6C	√			N/A			N/A		
	10	0.134	MITT6C	√			√			N/A		
	STD/40	0.258	MITT6C	√			√			√		
	120	0.500	MITT4A	√			√			√	√	
	160	0.625	MITT4A	√			√			√	√	
	XXS	0.750	MITT4A	√			√	√		√	√	
6	5	0.109	MITT6A	√			N/A			N/A		
	10	0.134	MITT6A	√			√			N/A		
			MITT6B	√	√		√	√		N/A		
	STD/40	0.280	MITT6A	√			√			√		
			MITT6B	√			√			√	√	
	60	0.344	MITT6A	√			√			√		
			MITT6B	√			√			√	√	
	XS/80	0.432	MITT6B	√			√			√		
			MITT6A	√			√			√		
			MITT6C	√	√		√	√			√√	√
	120	0.562	MITT6B	√			√			√		
			MITT6C	√			√	√		√	√	
	160	0.719	MITT6C	√			√			√		
	XX	0.864	MITT6C	√			√			√		
8	10	0.148	MITT8A	√			N/A			N/A		
	20	0.250	MITT8A	√			√			N/A		
	30	0.277	MITT8A	√			√			N/A		
	STD/40	0.322	MITT8A	√			√			√	√	
	60	0.406	MITT8A	√			√			√		
	XS/80	0.500	MITT8A	√			√			√		
			MITT8B	√	√		√	√√			√√	√
	100	0.594	MITT8B	√			√	√		√	√√	
	120	0.719	MITT8B	√			√	√		√	√	
	140	0.812	MITT8B	√			√			√		
	XX	0.875	MITT8B	√			√			√		
	160	0.906	MITT8B	√			√			√		

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
N/A			N/A			MITT4A5SK	MITT4A5BR	MITT4A5-90SK
N/A			N/A			MITT4A10SK	MITT4A10BR	MITT4A10-90SK
N/A			N/A			MITT4ASTD-40SK	MITT4ASTD-40BR	MITT4ASTD-40-90SK
√	√		N/A			MITT4A60SK	MITT4A60BR	MITT4A60-90SK
√	√		N/A			MITT4B60SK	MITT4B60BR	MITT4B60-90SK
√			N/A			MITT4AXS-80SK	MITT4AXS-80BR	MITT4AXS-80-90SK
√	√		N/A			MITT4BXS-80SK	MITT4BXS-80BR	MITT4BXS-80-90SK
√	√		N/A			MITT4CXS-80SK	MITT4CXS-80BR	MITT4CXS-80-90SK
√	√		√	√		MITT4B120SK	MITT4B120BR	MITT4B120-90SK
√	√		√	√		MITT4C120SK	MITT4C120BR	MITT4C120-90SK
√			√			MITT4B160SK	MITT4B160BR	MITT4B160-90SK
√	√			√	√	MITT4C160SK	MITT4C160BR	MITT4C160-90SK
√	√		√	√		MITT4CXXSSK	MITT4CXXSBR	MITT4CXXS-90SK
N/A			N/A			MITT6C-5-5SK	MITT6C-5-5BR	MITT6C-5-5-90SK
N/A			N/A			MITT6C-5-10SK	MITT6C-5-10BR	MITT6C-5-10-90SK
N/A			N/A			MITT6C-5-STD-40SK	MITT6C-5-STD-40BR	MITT6C-5-STD-40-90SK
√	√			√	√	MITT4A-5-120SK	MITT4A-5-120BR	MITT4A-5-120-90SK
√	√			√	√	MITT4A-5-160SK	MITT4A-5-160BR	MITT4A-5-160-90SK
√	√			√	√	MITT4A-5-XXSSK	MITT4A-5-XXSBR	MITT4A-5-XXS-90SK
N/A			N/A			MITT6A5SK	MITT6A5BR	MITT6A5-90SK
N/A			N/A			MITT6A10SK	MITT6A10BR	MITT6A10-90SK
N/A			N/A			MITT6B10SK	MITT6B10BR	MITT6B10-90SK
N/A			N/A			MITT6ASTD-40SK	MITT6ASTD-40BR	MITT6ASTD-40-90SK
N/A			N/A			MITT6BSTD-40SK	MITT6BSTD-40BR	MITT6BSTD-40-90SK
N/A			N/A			MITT6A60SK	MITT6A60BR	MITT6A60-90SK
N/A			N/A			MITT6B60SK	MITT6B60BR	MITT6B60-90SK
√	√		N/A			MITT6BXS-80SK	MITT6BXS-80BR	MITT6BXS-80-90SK
√			N/A			MITT6AXS-80SK	MITT6AXS-80BR	MITT6AXS-80-90SK
1	√√	√	N/A			MITT6CXS-80SK	MITT6CXS-80BR	MITT6CXS-80-90SK
√					√	MITT6B120SK	MITT6B120BR	MITT6B120-90SK
√	√				√	MITT6C120SK	MITT6C120BR	MITT6C120-90SK
√	√			√	√	MITT6C160SK	MITT6C160BR	MITT6C160-90SK
√					√	MITT6CXXSSK	MITT6CXXSBR	MITT6CXXS-90SK
N/A			N/A			MITT8A10SK	MITT8A10BR	MITT8A10-90SK
N/A			N/A			MITT8A20SK	MITT8A20BR	MITT8A20-90SK
N/A			N/A			MITT8A30SK	MITT8A30BR	MITT8A30-90SK
N/A			N/A			MITT8ASTD-40SK	MITT8ASTD-40BR	MITT8ASTD-40-90SK
N/A			N/A			MITT8A60SK	MITT8A60BR	MITT8A60-90SK
√			N/A			MITT8AXS-80SK	MITT8AXS-80BR	MITT8AXS-80-90SK
	√√	√	N/A			MITT8BXS-80SK	MITT8BXS-80BR	MITT8BXS-80-90SK
√	√√		N/A			MITT8B100SK	MITT8B100BR	MITT8B100-90SK
√	√		N/A			MITT8B120SK	MITT8B120BR	MITT8B120-90SK
√	√			√	√	MITT8B140SK	MITT8B140BR	MITT8B140-90SK
√	√				√	MITT8BXXSSK	MITT8BXXSBR	MITT8BXXS-90SK
√					√	MITT8B160SK	MITT8B160BR	MITT8B160-90SK

Tool and Standard Pressure Guide continued

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
10	10	0.165	MITT10A	√	√		N/A			N/A		
			MITT12C	√			N/A			N/A		
	20	0.250	MITT10A	√			√	√		N/A		
			MITT12C	√			√			N/A		
	30	0.307	MITT10A	√			√	√		N/A		
			MITT12C	√			√			N/A		
	STD/40	0.365	MITT10A	√			√			N/A		
			MITT12C	√			√			N/A		
	XS/60	0.500	MITT10A	√			√			√		
	80	0.594	MITT10A	√			√			√		
	100	0.719	MITT10B	√			√	√		√	√	
	120	0.844	MITT10B	√			√			√	√	
	XX/140	1.000	MITT10B	√			√			√		
	160	1.125	MITT10B	√			√			√		
			MITT8A	√	√		√	√√			√√	√
12	10	0.180	MITT12A	√			N/A			N/A		
			MITT14B	√			N/A			N/A		
	20	0.250	MITT12A	√			√			N/A		
			MITT14B	√			√			N/A		
	30	0.330	MITT12A	√			√			N/A		
			MITT14C	√			√			N/A		
	STD	0.375	MITT12A	√			√			N/A		
			MITT14C	√			√	√		N/A		
	40	0.406	MITT12A	√			√			√		
			MITT14C	√			√			√		
	XS	0.500	MITT12A	√			√			√		
			MITT14C	√			√			√	√	
	60	0.562	MITT12B	√			√	√		√	√	
			MITT12A	√			√			√		
			MITT14C	√			√			√	√	
	80	0.688	MITT12B	√			√			√	√	
	100	0.844	MITT12B	√			√			√		
	XX/120	1.000	MITT12B	√			√			√		
			MITT12C	√	√		√	√√			√√	√
	140	1.125	MITT12C	√			√			√	√	
	160	1.312	MITT12C	√			√			√		
			MITT10A	√			√	√		√	√	

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
N/A			N/A			MITT10A10SK	MITT10A10BR	MITT10A10-90SK
N/A			N/A			MITT12C-10-10SK	MITT12C-10-10BR	MITT12C-10-10-90SK
N/A			N/A			MITT10A20SK	MITT10A20BR	MITT10A20-90SK
N/A			N/A			MITT12C-10-20SK	MITT12C-10-20BR	MITT12C-10-20-90SK
N/A			N/A			MITT10A30SK	MITT10A30BR	MITT10A30-90SK
N/A			N/A			MITT12C-10-30SK	MITT12C-10-30BR	MITT12C-10-30-90SK
N/A			N/A			MITT10ASTD-40SK	MITT10ASTD-40BR	MITT10ASTD-40-90SK
N/A			N/A			MITT12C-10-STD-40SK	MITT12C-10-STD-40BR	MITT12C-10-STD-40-90SK
N/A			N/A			MITT10AXS-60SK	MITT10AXS-60BR	MITT10AXS-60-90SK
√			N/A			MITT10A80SK	MITT10A80BR	MITT10A80-90SK
√	√		N/A			MITT10B100SK	MITT10B100BR	MITT10B100-90SK
√	√		N/A			MITT10B120SK	MITT10B120BR	MITT10B120-90SK
√	√			√	√	MITT10BXXS-140SK	MITT10BXXS-140BR	MITT10BXXS-140-90SK
√					√	MITT10B160SK	MITT10B160BR	MITT10B160-90SK
	√√	√		√√	√	MITT8A-10-160SK	MITT8A-10-160BR	MITT8A-10-160-90SK
N/A			N/A			MITT12A10SK	MITT12A10BR	MITT12A10-90SK
N/A			N/A			MITT14B-12-10SK	MITT14B-12-10BR	MITT14B-12-10-90SK
N/A			N/A			MITT12A20SK	MITT12A20BR	MITT12A20-90SK
N/A			N/A			MITT14B-12-20SK	MITT14B-12-20BR	MITT14B-12-20-90SK
N/A			N/A			MITT12A30SK	MITT12A30BR	MITT12A30-90SK
N/A			N/A			MITT14C-12-30SK	MITT14C-12-30BR	MITT14C-12-30-90SK
N/A			N/A			MITT12ASTDSK	MITT12ASTDBR	MITT12ASTD-90SK
N/A			N/A			MITT14C-12-STDSK	MITT14C-12-STDBR	MITT14C-12-STD-90SK
N/A			N/A			MITT12A40SK	MITT12A40BR	MITT12A40-90SK
N/A			N/A			MITT14C-12-40SK	MITT14C-12-40BR	MITT14C-12-40-90SK
N/A			N/A			MITT12AXSSK	MITT12AXSBR	MITT12AXS-90SK
N/A			N/A			MITT14C-12-XSSK	MITT14C-12-XSBR	MITT14C-12-XS-90SK
N/A			N/A			MITT12B60SK	MITT12B60BR	MITT12B60-90SK
N/A			N/A			MITT12A60SK	MITT12A60BR	MITT12A60-90SK
N/A			N/A			MITT14C-12-60SK	MITT14C-12-60BR	MITT14C-12-60-90SK
N/A			N/A			MITT12B80SK	MITT12B80BR	MITT12B80-90SK
√	√		N/A			MITT12B100SK	MITT12B100BR	MITT12B100-90SK
√					√	MITT12BXXS-120SK	MITT12BXXS-120BR	MITT12BXXS-120-90SK
	√√	√		√√	√	MITT12CXXS-120SK	MITT12CXXS-120BR	MITT12CXXS-120-90SK
√	√			√√	√	MITT12C140SK	MITT12C140BR	MITT12C140-90SK
√	√			√√	√	MITT12C160SK	MITT12C160BR	MITT12C160-90SK
√	√			√√	√	MITT10A-12-160SK	MITT10A-12-160BR	MITT10A-12-160-90SK

Tool and Standard Pressure Guide continued

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
14	10	0.250	MITT14A	√			√	√		N/A		
			MITT16C	√			√	√		N/A		
	20	0.312	MITT14A	√			√			N/A		
			MITT16C	√			√			N/A		
	STD/30	0.375	MITT14A	√			√			N/A		
			MITT16C	√			√			N/A		
	40	0.438	MITT14A	√			√			N/A		
			MITT14B	√	√		√	√√		N/A		
			MITT16C	√			√			N/A		
	XS	0.500	MITT14A	√			√			√	√	
			MITT14B	√			√	√		√	√	
	60	0.594	MITT14B	√			√			√	√	
	80	0.750	MITT14B	√			√			√	√	
			MITT12A	√			√	√		√	√	
	100	0.938	MITT14C	√	√		√	√√			√√	√
			MITT12A	√			√			√	√	
	120	1.094	MITT14C	√			√			√	√	
			MITT12A	√			√			√		
	140	1.250	MITT14C	√			√			√	√	
			MITT12B	√			√	√		√	√	
	160	1.406	MITT14C	√			√			√		
			MITT12B	√			√			√	√	
16	10	0.250	MITT16A	√			N/A			N/A		
			MITT18C	√			N/A			N/A		
	20	0.312	MITT16A	√			√			N/A		
			MITT18C	√			√			N/A		
	STD/30	0.375	MITT16A	√			√			N/A		
			MITT18C	√			√			N/A		
	XS/40	0.540	MITT16A	√			√			√	√	
			MITT18C	√			√			√		
			MITT18D	√			√	√		√	√	
	60	0.656	MITT16A	√			√			√		
			MITT18D	√			√			√	√	
	80	0.844	MITT16B	√			√	√		√	√	
			MITT18D	√			√			√		
	100	1.031	MITT16B	√			√			√	√	
	120	1.219	MITT16C	√			√	√		√	√	
			MITT14A	√			√	√		√	√	
	140	1.438	MITT16C	√			√			√	√	
			MITT14A	√			√			√	√	
	160	1.594	MITT16C	√			√			√		
			MITT14A	√			√			√		

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
N/A			N/A			MITT14A10SK	MITT14A10BR	MITT14A10-90SK
N/A			N/A			MITT16C-14-10SK	MITT16C-14-10BR	MITT16C-14-10-90SK
N/A			N/A			MITT14A20SK	MITT14A20BR	MITT14A20-90SK
N/A			N/A			MITT16C-14-20SK	MITT16C-14-20BR	MITT16C-14-20-90SK
N/A			N/A			MITT14ASTD-30SK	MITT14ASTD-30BR	MITT14ASTD-30-90SK
N/A			N/A			MITT16C-14-STD-30SK	MITT16C-14-STD-30BR	MITT16C-14-STD-30-90SK
N/A			N/A			MITT14A40SK	MITT14A40BR	MITT14A40-90SK
N/A			N/A			MITT14B40SK	MITT14B40BR	MITT14B40-90SK
N/A			N/A			MITT16C-14-40SK	MITT16C-14-40BR	MITT16C-14-40-90SK
N/A			N/A			MITT14AXSSK	MITT14AXSBR	MITT14AXS-90SK
N/A			N/A			MITT14BXSSK	MITT14BXSBR	MITT14BXS-90SK
N/A			N/A			MITT14B60SK	MITT14B60BR	MITT14B60-90SK
N/A			N/A			MITT14B80SK	MITT14B80BR	MITT14B80-90SK
N/A			N/A			MITT12A-14-80SK	MITT12A-14-80BR	MITT12A-14-80-90SK
	√√	√	N/A			MITT14C100SK	MITT14C100BR	MITT14C100-90SK
√	√		N/A			MITT12A-14-100SK	MITT12A-14-100BR	MITT12A-14-100-90SK
√	√			√√	√	MITT14C120SK	MITT14C120BR	MITT14C120-90SK
√	√			√	√	MITT12A-14-120SK	MITT12A-14-120BR	MITT12A-14-120-90SK
√	√			√	√	MITT14C140SK	MITT14C140BR	MITT14C140-90SK
	√√	√		√√	√	MITT12B-14-140SK	MITT12B-14-140BR	MITT12B-14-140-90SK
√					√	MITT14C160SK	MITT14C160BR	MITT14C160-90SK
√	√			√	√	MITT12B-14-160SK	MITT12B-14-160BR	MITT12B-14-160-90SK

N/A			N/A			MITT16A10SK	MITT16A10BR	MITT16A10-90SK
N/A			N/A			MITT18C-16-10SK	MITT18C-16-10BR	MITT18C-16-10-90SK
N/A			N/A			MITT16A20SK	MITT16A20BR	MITT16A20-90SK
N/A			N/A			MITT18C-16-20SK	MITT18C-16-20BR	MITT18C-16-20-90SK
N/A			N/A			MITT16A-STD-30SK	MITT16A-STD-30BR	MITT16A-STD-30-90SK
N/A			N/A			MITT18C-16-STD-30SK	MITT18C-16-STD-30BR	MITT18C-16-STD-30-90SK
N/A			N/A			MITT16AXS-40SK	MITT16AXS-40BR	MITT16AXS-40-90SK
N/A			N/A			MITT18C-16-XS-40SK	MITT18C-16-XS-40BR	MITT18C-16-XS-40-90SK
N/A			N/A			MITT18D-16-XS-40SK	MITT18D-16-XS-40BR	MITT18D-16-XS-40-90SK
N/A			N/A			MITT16A60SK	MITT16A60BR	MITT16A60-90SK
N/A			N/A			MITT18D-16-60SK	MITT18D-16-60BR	MITT18D-16-60-90SK
N/A			N/A			MITT16B80SK	MITT16B80BR	MITT16B80-90SK
N/A			N/A			MITT18D-16-80SK	MITT18D-16-80BR	MITT18D-16-80-90SK
√	√		N/A			MITT16B100SK	MITT16B100BR	MITT16B100-90SK
√	√√			√√	√	MITT16C120SK	MITT16C120BR	MITT16C120-90SK
√	√√			√√	√	MITT14A-16-120SK	MITT14A-16-120BR	MITT14A-16-120-90SK
√	√			√	√	MITT16C140SK	MITT16C140BR	MITT16C140-90SK
√	√			√	√	MITT14A-16-140SK	MITT14A-16-140BR	MITT14A-16-140-90SK
√					√	MITT16C160SK	MITT16C160BR	MITT16C160-90SK
√					√	MITT14A-16-160SK	MITT14A-16-160BR	MITT14A-16-160-90SK

Tool and Standard Pressure Guide continued

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
18	10	0.250	MITT18A	√	√		N/A			N/A		
			MITT20C	√			N/A			N/A		
	20	0.312	MITT18A	√			N/A			N/A		
			MITT20C	√			N/A			N/A		
	STD	0.375	MITT18A	√			√	√		N/A		
			MITT20C	√			√			N/A		
	30	0.438	MITT18A	√			√	√		N/A		
			MITT20C	√			√			N/A		
			MITT20D	√	√		√	√√		N/A		
	XS	0.500	MITT18A	√			√			N/A		
			MITT20D	√			√	√		N/A		
	40	0.562	MITT18A	√			√			N/A		
			MITT20D	√			√	√		N/A		
	60	0.750	MITT18B	√			√			√	√	
			MITT20D	√			√			√	√	
	80	0.938	MITT18B	√			√			√	√	
	100	1.156	MITT18C	√			√	√		√	√	
	120	1.375	MITT18C	√			√			√	√	
			MITT16A	√			√			√	√	
	140	1.562	MITT18D	√			√	√		√	√	
			MITT16A	√			√			√		
	160	1.781	MITT18D	√			√	√		√	√	
			MITT16B	√			√	√		√	√	
20	10	0.250	MITT20A	√			N/A			N/A		
	STD/20	0.375	MITT20A	√			√	√		N/A		
	XS/30	0.500	MITT20A	√			√			N/A		
	40	0.594	MITT20B	√			√	√		N/A		
	60	0.812	MITT20B	√			√	√		√	√	
	80	1.031	MITT20C	√			√	√		√	√	
	100	1.281	MITT20C	√			√	√		√	√	
		1.500	MITT18A	√			√	√			√	√
	120	1.750	MITT20D	√			√	√		√	√	
			MITT18A	√			√			√	√	
	140	1.969	MITT20D	√			√	√		√	√	
			MITT18B	√			√	√		√	√	
	160	0.375	MITT18B	√			√	√		√	√	

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
N/A			N/A			MITT18A10SK	MITT18A10BR	MITT18A10-90SK
N/A			N/A			MITT20C-18-10SK	MITT20C-18-10BR	MITT20C-18-10-90SK
N/A			N/A			MITT18A20SK	MITT18A20BR	MITT18A20-90SK
N/A			N/A			MITT20C-18-20SK	MITT20C-18-20BR	MITT20C-18-20-90SK
N/A			N/A			MITT18ASTDSK	MITT18ASTDBR	MITT18ASTD-90SK
N/A			N/A			MITT20C-18-STDSK	MITT20C-18-STDBR	MITT20C-18-STD-90SK
N/A			N/A			MITT18A30SK	MITT18A30BR	MITT18A30-90SK
N/A			N/A			MITT20C-18-30SK	MITT20C-18-30BR	MITT20C-18-30-90SK
N/A			N/A			MITT20D-18-30SK	MITT20D-18-30BR	MITT20D-18-30-90SK
N/A			N/A			MITT18AXSSK	MITT18AXSBR	MITT18AXS-90SK
N/A			N/A			MITT20D-18-XSSK	MITT20D-18-XSBR	MITT20D-18-XS-90SK
N/A			N/A			MITT18A40SK	MITT18A40BR	MITT18A40-90SK
N/A			N/A			MITTT20D-18-40SK	MITTT20D-18-40BR	MITTT20D-18-40-90SK
N/A			N/A			MITT18B60SK	MITT18B60BR	MITT18B60-90SK
N/A			N/A			MITT20D-18-60SK	MITT20D-18-60BR	MITT20D-18-60-90SK
N/A			N/A			MITT18B80SK	MITT18B80BR	MITT18B80-90SK
	√√	√	N/A			MITT18C100SK	MITT18C100BR	MITT18C100-90SK
	√√	√	N/A			MITT18C120SK	MITT18C120BR	MITT18C120-90SK
	√	√	N/A			MITT16A-18-120SK	MITT16A-18-120BR	MITT16A-18-120-90SK
	√√	√		√√	√	MITT18D140SK	MITT18D140BR	MITT18D140-90SK
	√	√		√	√	MITT16A-18-140SK	MITT16A-18-140BR	MITT16A-18-140-90SK
	√	√		√	√	MITT18D-160SK	MITT18D-160BR	MITT18D-160-90SK
	√√	√		√√	√	MITT16B-18-160SK	MITT16B-18-160BR	MITT16B-18-160-90SK

N/A			N/A			MITT20A10SK	MITT20A10BR	MITT20A10-90SK
N/A			N/A			MITT20ASTD-20SK	MITT20ASTD-20BR	MITT20ASTD-20-90SK
N/A			N/A			MITT20AXS-30SK	MITT20AXS-30BR	MITT20AXS-30-90SK
N/A			N/A			MITT20B40SK	MITT20B40BR	MITT20B40-90SK
N/A			N/A			MITT20B60SK	MITT20B60BR	MITT20B60-90SK
N/A			N/A			MITT20C8SK0	MITT20C8BR0	MITT20C8-90SK0
	√	√	N/A			MITT20C100SK	MITT20C100BR	MITT20C100-90SK
	√√	√	N/A			MITT18A-20-100SK	MITT18A-20-100BR	MITT18A-20-100-90SK
	√√	√		√√	√	MITT20D120SK	MITT20D120BR	MITT20D120-90SK
	√	√		√	√	MITT18A-20-120SK	MITT18A-20-120BR	MITT18A-20-120-90SK
	√	√		√	√	MITT20D140SK	MITT20D140BR	MITT20D140-90SK
	√√	√		√√	√	MITT18A-20-140SK	MITT18A-20-140BR	MITT18A-20-140-90SK
	√	√		√	√	MITT18B-20-160SK	MITT18B-20-160BR	MITT18B-20-160-90SK

Tool and Standard Pressure Guide continued

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
22	STD	0.375	MITT22A	√			N/A			N/A		
			MITT22A	√			N/A			N/A		
	XS	0.500	MITT22A	√			√	√		N/A		
			MITT22A	√			√	√		N/A		
	60	0.875	MITT22B	√			√	√		√	√	
			MITT22B	√			√	√		√	√	
	80	1.125	MITT22B	√			√	√			√	√
			MITT22B	√			√	√			√√	√
			MITT22B	√			√	√			√	√
	100	1.375	MITT22C	√			√	√			√√	√
	120	1.625	MITT22C	√			√	√			√	√
			MITT22C	√			√	√			√√	√
	140	1.875	MITT22D	√	√		√	√			√√	√
	140	1.875	MITT22D	√	√		√	√			√	√
	160	2.125	MITT22D	√			√	√			√	√
			MITT22D	√			√	√			√√	√
24	10	0.250	MITT24A	√			N/A			N/A		
	STD/20	0.375	MITT24A	√			√	√		N/A		
	XS	0.500	MITT24A	√			√	√		N/A		
	30	0.562	MITT24A	√			√	√		N/A		
	40	0.850	MITT24B	√			√	√			√√	√
	60	0.969	MITT24B	√			√	√			√	√
	80	1.219	MITT24C	√	√		√	√√			√√	√
	100	1.531	MITT24C	√			√	√			√	√
	120	1.812	MITT24D	√			√	√			√√	√
	140	2.062	MITT24D	√			√	√			√	√
	160	2.344	MITT20A	√			√	√			√	√
26	10	0.312	MITT26A	√	√		N/A			N/A		
	STD	0.375	MITT26A	√				√	√	N/A		
	XS	0.500	MITT26A	√					√	N/A		
30	10	0.313	MITT30A	√	√		N/A			N/A		
	STD	0.375	MITT30A	√					√	N/A		
	XS/20	0.500	MITT30A	√					√	N/A		
	30	0.625	MITT30A	√					√	N/A		
	40	0.750	MITT30B	√					√	N/A		
32	10	0.313	MITT30A	√	√		N/A			N/A		
	STD	0.375	MITT30A	√			N/A			N/A		
	XS/20	0.500	MITT30A	√					√	N/A		
	30	0.625	MITT30A	√					√	N/A		
	40	0.750	MITT30B	√					√		√	√

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
N/A			N/A			MITT22ASTDSK	MITT22ASTDBR	MITT22ASTD-90SK
N/A			N/A			MITT24C-22-STDSK	MITT24C-22-STDBR	MITT24C-22-STD-90SK
N/A			N/A			MITT22AXSSK	MITT22AXSBR	MITT22AXS-90SK
N/A			N/A			MITT24C-22-XSSK	MITT24C-22-XSBR	MITT24C-22-XS-90SK
N/A			N/A			MITT22B60SK	MITT22B60BR	MITT22B60-90SK
N/A			N/A			MITT24D-22-60SK	MITT24D-22-60BR	MITT24D-22-60-90SK
N/A			N/A			MITT22B80SK	MITT22B80BR	MITT22B80-90SK
N/A			N/A			MITT20A-22-80SK	MITT20A-22-80BR	MITT20A-22-80-90SK
N/A			N/A			MITT24D-22-80SK	MITT24D-22-80BR	MITT24D-22-80-90SK
	√√	√	N/A			MITT22C100SK	MITT22C100BR	MITT22C100-90SK
	√	√	N/A			MITT22C120SK	MITT22C120BR	MITT22C120-90SK
	√√	√	N/A			MITT20B-22-120SK	MITT20B-22-120BR	MITT20B-22-120-90SK
	√√	√	N/A			MITT22D140SK	MITT22D140BR	MITT22D140-90SK
	√	√	N/A			MITT20B-22-140SK	MITT20B-22-140BR	MITT20B-22-140-90SK
	√	√		√	√	MITT22D160SK	MITT22D160BR	MITT22D160-90SK
	√√	√		√√	√	MITT20C-22-160SK	MITT20C-22-160BR	MITT20C-22-160-90SK
N/A			N/A			MITT24A10SK	MITT24A10BR	MITT24A10-90SK
N/A			N/A			MITT24ASTD-20SK	MITT24ASTD-20BR	MITT24ASTD-20-90SK
N/A			N/A			MITT24AXSSK	MITT24AXSBR	MITT24AXS-90SK
N/A			N/A			MITT24A30SK	MITT24A30BR	MITT24A30-90SK
N/A			N/A			MITT24B40SK	MITT24B40BR	MITT24B40-90SK
N/A			N/A			MITT24B60SK	MITT24B60BR	MITT24B60-90SK
N/A			N/A			MITT24C80SK	MITT24C80BR	MITT24C80-90SK
	√	√	N/A			MITT24C100SK	MITT24C100BR	MITT24C100-90SK
	√√	√	N/A			MITT24D120SK	MITT24D120BR	MITT24D120-90SK
	√	√		√	√	MITT24D140SK	MITT24D140BR	MITT24D140-90SK
	√	√		√√	√	MITT20A-24-160SK	MITT20A-24-160BR	MITT20A-24-160-90SK
N/A			N/A			MITT24A10SK	MITT24A10BR	MITT24A10-90SK
N/A			N/A			MITT24ASTDSK	MITT24ASTDBR	MITT24ASTD-90SK
N/A			N/A			MITT24AXSSK	MITT24AXSBR	MITT24AXS-90SK
N/A			N/A			MITT30A10SK	MITT30A10BR	MITT30A10-90SK
N/A			N/A			MITT30ASTDSK	MITT30ASTDBR	MITT30ASTD-90SK
N/A			N/A			MITT30AXS-20SK	MITT30AXS-20BR	MITT30AXS-20-90SK
N/A			N/A			MITT30A30SK	MITT30A30BR	MITT30A30-90SK
N/A			N/A			MITT30B40SK	MITT30B40BR	MITT30B40-90SK
N/A			N/A			MITT30A10SK	MITT30A10BR	MITT30A10-90SK
N/A			N/A			MITT30ASTDSK	MITT30ASTDBR	MITT30ASTD-90SK
N/A			N/A			MITT30A-XS-20SK	MITT30A-XS-20BR	MITT30A-XS-20-90SK
N/A			N/A			MITT30A30SK	MITT30A30BR	MITT30A30-90SK
N/A			N/A			MITT30B40SK	MITT30B40BR	MITT30B40-90SK

Tool and Standard Pressure Guide continued

Pipe Size	Pipe SCH	Pipe Wall Thickness	MITT TOOL Part Number	425PSI			1150 psi			2250 psi		
INCH	ASME	INCH		BN 70	SB	BN 90	BN 70	SB	BN 90	BN 70	SB	BN 90
34	10	0.312	MITT32A	√	√		N/A			N/A		
	STD	0.375	MITT32A	√			N/A			N/A		
	XS/20	0.500	MITT32A	√					√	N/A		
	30	0.625	MITT32A	√					√	N/A		
	40	0.688	MITT32B	√					√	N/A		
36	10	0.312	MITT36A	√	√		N/A			N/A		
	STD	0.375	MITT36A	√			N/A			N/A		
	XS	0.500	MITT36A	√					√	N/A		
38	STD	0.250	MITT38A	√			N/A			N/A		
	XS	0.375	MITT38A	√			N/A			N/A		
40	STD	0.250	MITT40A	√			N/A			N/A		
	XS	0.375	MITT40A	√			N/A			N/A		

3300 psi			4500 psi			Buna 70 Seal Part Number	Seal Backing Rings Part Number	Buna 90 Seals Part Number
BN 70	SB	BN 90	BN 70	SB	BN 90			
N/A			N/A			MITT32A10SK	MITT32A10BR	MITT32A10-90SK
N/A			N/A			MITT32ASTDSK	MITT32ASTDBR	MITT32ASTD-90SK
N/A			N/A			MITT32AXS-20SK	MITT32AXS-20BR	MITT32AXS-20-90SK
N/A			N/A			MITT32A30SK	MITT32A30BR	MITT32A30-90SK
N/A			N/A			MITT32B40SK	MITT32B40BR	MITT32B40-90SK
N/A			N/A			MITT36A10SK	MITT36A10BR	MITT36A10-90SK
N/A			N/A			MITT36ASTDSK	MITT36ASTDBR	MITT36ASTD-90SK
N/A			N/A			MITT36AXSSK	MITT36AXSBR	MITT36AXS-90SK
N/A			N/A			MITT38ASTDSK	MITT38ASTDBR	MITT38ASTD-90SK
N/A			N/A			MITT38AXSSK	MITT38AXSBR	MITT38AXS-90SK
N/A			N/A			MITT40ASTDSK	MITT40ASTDBR	MITT40ASTD-90SK
N/A			N/A			MITT40AXSSK	MITT40AXSBR	MITT40AXS-90SK