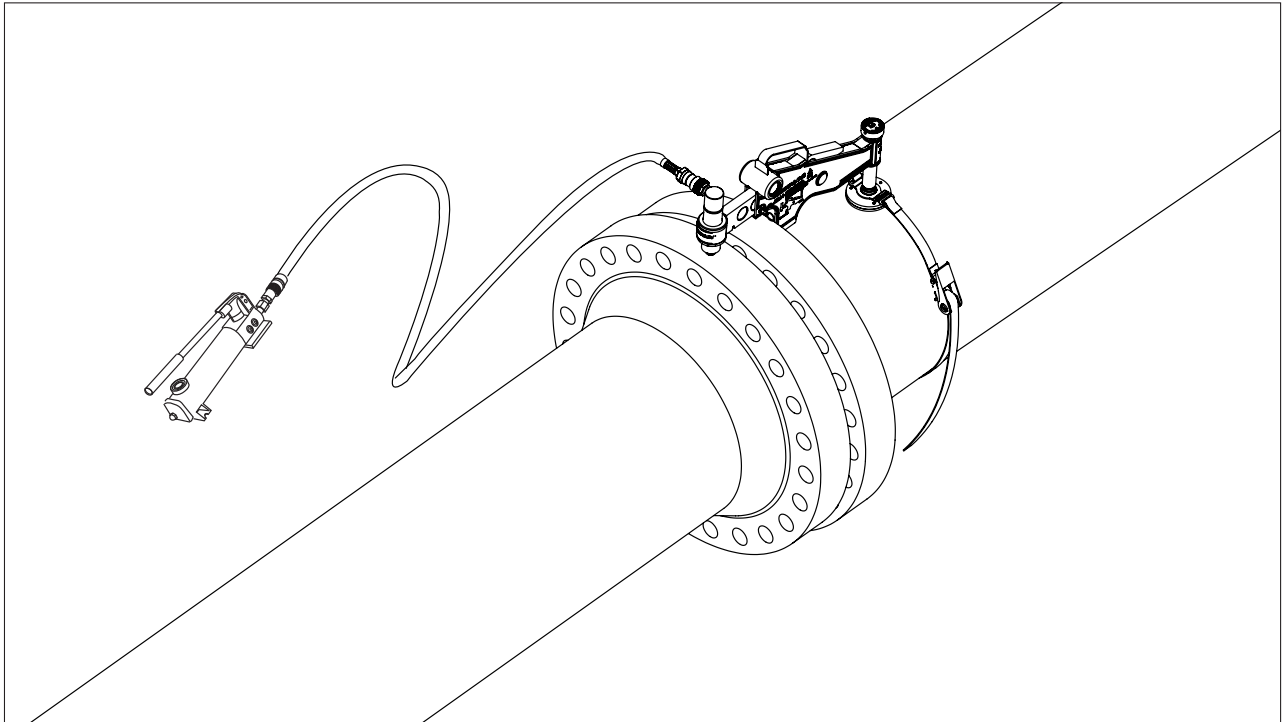




L4065

Rev. C

09/19



Paragraph	page
1.0 Receiving Instructions . . . . .	2
2.0 Safety Issues . . . . .	2
3.0 Product Description . . . . .	2
4.0 Safety Information . . . . .	3
5.0 List of Equipment . . . . .	3
6.0 Misalignment Determination . . . . .	3
7.0 Installation and Operation . . . . .	4
8.0 Rotational or Twist Misalignment . . . . .	5
9.0 Dismantling the ATM-9 . . . . .	5
10.0 Inspection and Examination . . . . .	6
11.0 Storage . . . . .	6
12.0 Lubrication and Maintenance . . . . .	6
13.0 Troubleshooting . . . . .	7
14.0 Air Lock Removal . . . . .	7
15.0 Minimum / Maximum Extension . . . . .	7
16.0 Application Range . . . . .	7
17.0 Range of Application Tables . . . . .	8-10
18.0 Weights and Dimensions . . . . .	11

For other languages go to [www.enerpac.com](http://www.enerpac.com).  
Weitere Sprachen finden Sie unter [www.enerpac.com](http://www.enerpac.com).  
Para otros idiomas visite [www.enerpac.com](http://www.enerpac.com).  
Pour toutes les autres langues, rendez-vous sur [www.enerpac.com](http://www.enerpac.com).  
Per altre lingue visitate il sito [www.enerpac.com](http://www.enerpac.com).

その他の言語は[www.enerpac.com](http://www.enerpac.com)でご覧いただけます。  
이 지침 시트의 다른 언어 버전은 [www.enerpac.com](http://www.enerpac.com).  
Ga voor de overige talen naar [www.enerpac.com](http://www.enerpac.com).  
For alle andre språk henviser vi til [www.enerpac.com](http://www.enerpac.com).  
Para outros idiomas consulte [www.enerpac.com](http://www.enerpac.com).  
如需其他语言, 请前往 [www.enerpac.com](http://www.enerpac.com).

## 1.0 RECEIVING INSTRUCTIONS

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

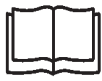
### SAFETY FIRST

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation. Enerpac cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact Enerpac when in doubt as to the safety precautions and applications. To protect your warranty, use only ENERPAC hydraulic oil.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

## 2.0 SAFETY ISSUES



Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.



**IMPORTANT:** Minimum age of the operator must be 18 years. The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the Enerpac equipment. The operator is responsible for this activity towards other persons.



**WARNING:** To avoid personal injury and possible equipment damage, make sure all hydraulic components withstand the maximum pressure of 10,000 psi [700 bar].



**IMPORTANT:** Minimize the risk of overloading. Use hydraulic gauges in each hydraulic system to indicate safe operating loads. It is your window to what is happening in the system.



**WARNING:** Do not overload equipment. Overloading causes equipment failure and possible personal injury.



**CAUTION:** Make sure that all system components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges and corrosive chemicals.



**CAUTION:** Avoid sharp bends and kinks that will cause severe back-up pressure in hoses. Bends and kinks lead to premature hose failure.



**WARNING:** Immediately replace worn or damaged parts with genuine Enerpac parts. Enerpac parts are designed to fit properly and withstand rated loads.



**WARNING:** Always wear safety glasses. The operator must take precaution against injury due to failure of the tool or workpiece



**DANGER:** Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.



**WARNING:** Never pressurize uncoupled couplers. Only use hydraulic equipment in a coupled system.



**IMPORTANT:** DO NOT lift hydraulic equipment by the hoses or couplers. Use the carrying handle or other means of safe transport.



We recommend the use of special loosening liquids or sprays. Enerpac hydraulic torque wrenches offer both square and hexagon drive units to loosen or tighten bolts and nuts. Enerpac offers nut splitters in case a nut can not be removed.

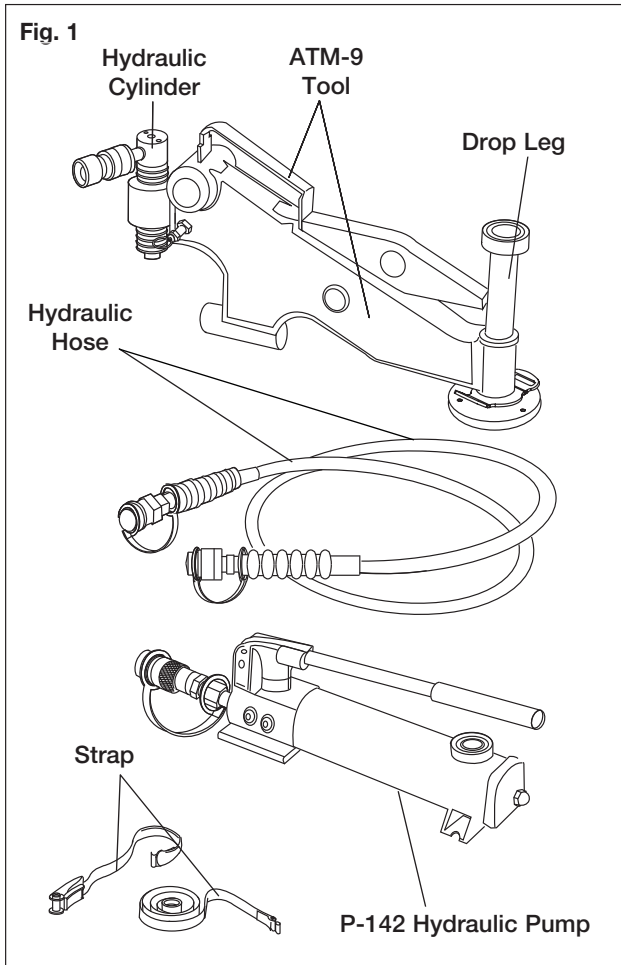
## 3.0 PRODUCT DESCRIPTION

The ATM-9 Alignment Tool is intended for use in typical maintenance and installation procedures. It allows the realignment of misaligned flanges within a 9 Ton [90 kN] physical capacity. For example, it may be used to assist in the replacement of ring and other type joints.

The ATM-9 is a hydraulically operated tool actuated by a hydraulic cylinder and hand pump. The maximum operating pressure is 10,000 psi [700 bar].

The use of these instructions will promote the safe use and maximum service life of the tool. All sections of this instruction sheet should be read prior to using the tool.

### 3.1 Major Features and Components



### 3.2 Technical Data

Tool Description:	Aligning Force:
Hydraulic fixed flange and rotational alignment tool.	9.0 T [90 kN] from 10,000 psi [700 bar] of hydraulic pressure.

**Note:** Refer to section 18.0 for weights and dimensions.

### 4.0 SAFETY INFORMATION

**IMPORTANT:** In all installations the site safety requirements must be adhered to. The safety of the operator and any assisting personnel is of paramount importance along with the safety of others including the general public.

These instructions are intended only to cover the safe operation of ATM-9 during a normal maintenance and installation operation. All other safety aspects must be controlled by the operation supervisor.



**CAUTION:** The ATM-9 must not be attached to pressure vessel nozzles.



**WARNING:** Never attach the ATM-9 to a joint until after the flange bolts have been loosened and removed. Overloading may occur if bolts are removed while the tool is installed, and the resulting force is greater than the safe working load of the tool.

### 5.0 LIST OF EQUIPMENT

The tool set includes:

- ATM-9 alignment tool with hydraulic cylinder.
- Hydraulic hose, 6 feet [1,8 m] long.
- P-142 hydraulic hand pump.
- 3/8 inch NPTF couplers on hose, cylinder and pump.
- Ratchet and strap.
- Instruction sheet.
- Carrying case.

**Note:** All hydraulic components are rated for 10,000 psi [700 bar] operation.

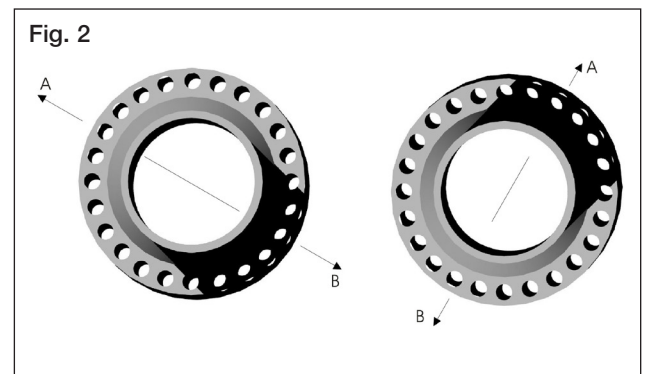
### 6.0 MISALIGNMENT DETERMINATION PROCEDURE

- The ATM-9 must not be attached to a flanged joint prior to the misalignment determination procedure being carried out. Refer to warning statement in section 4.0.
- Every second bolt should be loosened and removed. Continue with this procedure. Misalignment may not occur until only a few bolts remain. At this point the direction of any misalignment should become obvious.
- The ATM-9, once attached, will directly push against the misalignment, bringing the joint back into alignment.

**Example:** Misalignment in various directions

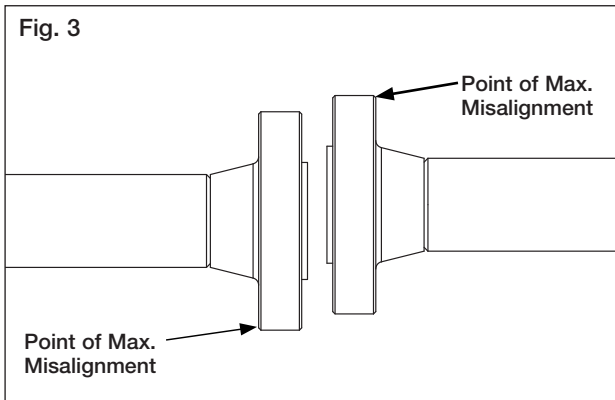
A flanged joint, once broken down, may spring out of alignment at any point, or in any direction around.

See Fig. 2. The ATM-9 should be attached at the maximum point of misalignment i.e. A or B. Each example shows where ATM-9 should be attached.

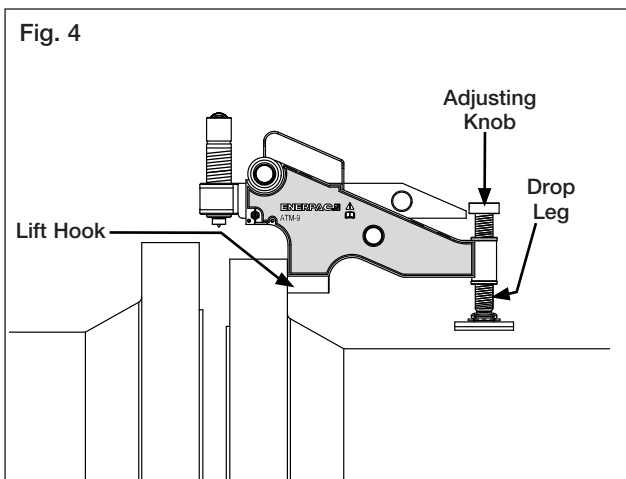


## 7.0 INSTALLATION AND OPERATION

1. Determine the maximum points of misalignment. (see Fig. 3). The maximum points are on the top or bottom of the joint, as illustrated by the arrows.

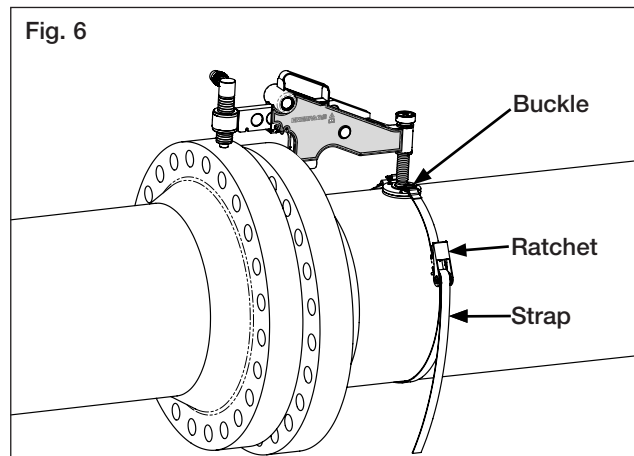
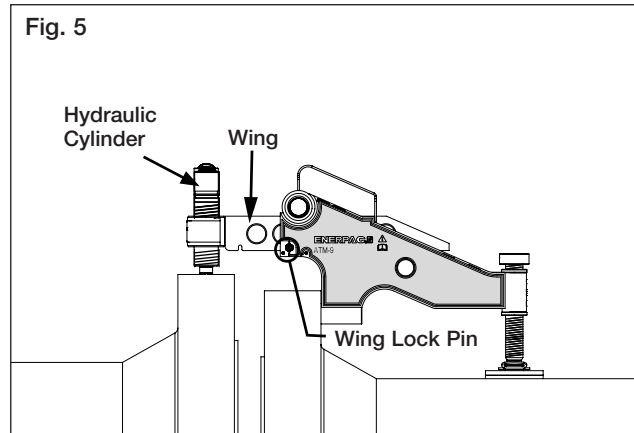


2. Guide the lift hook of the tool into the bolt hole at the maximum point of misalignment. Then, adjust the drop leg down onto the pipe by turning the adjusting knob in the clockwise direction (see Fig. 4).

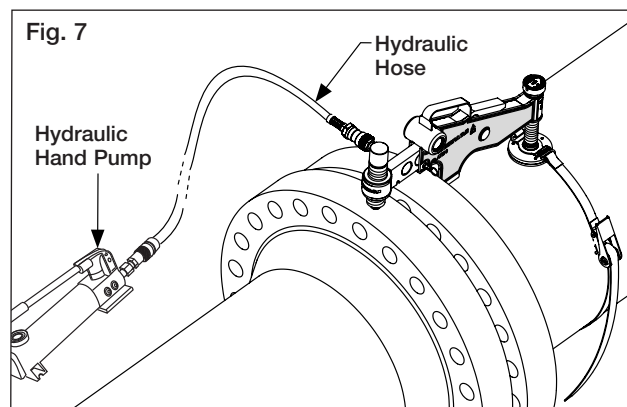


**Note:** The tool should be held up level within the bolt hole during adjustment. The tool must remain parallel to the pipe at all times.

3. Pull out the lock pin and extend the wing out to the desired distance (see Fig. 5). Rotate the cylinder clockwise until it locates onto the surface of the opposite flange. At this stage, ensure that the tool is sitting level and that the end of the cylinder is in full contact with the surface of the higher flange.
4. Attach the hook of the strap through one of the slots on the buckle (located above the drop leg pad). Place the hook of the ratchet through the other slot on the opposite side of the buckle. Feed the end of the strap through the ratchet and tighten. (see Fig. 6).



5. Connect the P-142 hydraulic pump to the hydraulic hose, and the hose to the hydraulic cylinder. Operate the pump handle until the joint comes into alignment. (see Fig. 7).



**Note:** The ATM-9 hydraulic cylinder is rated at 10,000 psi [700 bar] operating pressure. The P-142 hydraulic pump contains a built-in safety relief valve that opens at approximately 10,500 psi [724 bar].

**WARNING:** If a different pump is used in place of the P-142 for any reason, be certain that the pump relief valve is not set higher than 10,500 psi [724 bar]. Install a pressure gauge in the circuit to monitor system pressure.

- When alignment is completed, the flange bolts may be inserted and tightened. After replacing all of the bolts in all open bolt holes (except for the bolt hole in which the tool lift hook is inserted), remove the tool by reversing steps 1 through 5.



**CAUTION:** Open pump release valve and be sure that all hydraulic pressure is relieved before disconnecting any hoses or fittings.

- After removing the tool from the flange, insert and tighten the last flange bolt in the remaining bolt hole.

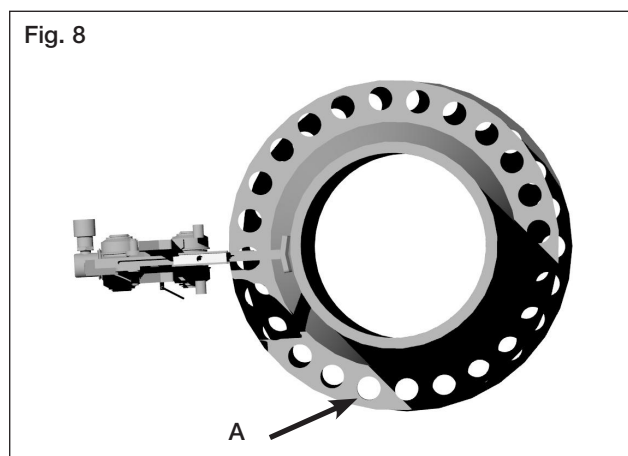
## 8.0 ROTATIONAL OR TWIST MISALIGNMENT

This is a common problem on both onshore and offshore pipeline installations (see Fig. 8). Quite often the flanges are in alignment but the operator is unable to fit the bolt into any two corresponding bolt holes on the joint's circumference. The ATM-9, with its 90 kN [9 ton] capacity, has the ability to manipulate the flanges in various directions.

The set-up procedure is the same as before with one possible exception. The ATM-9 can be attached to the most accessible point on the joint's circumference because the misalignment occurs at all bolt holes to the same degree.

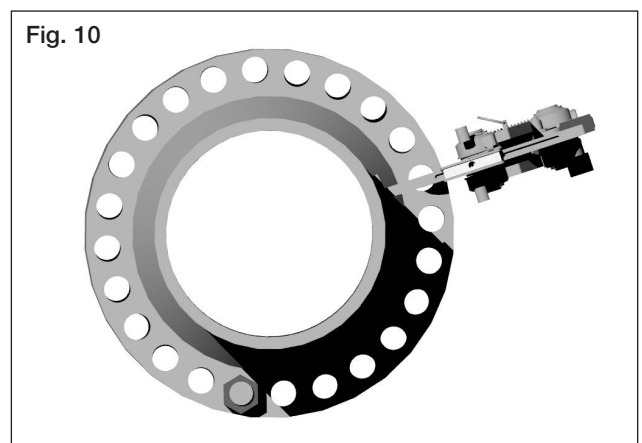
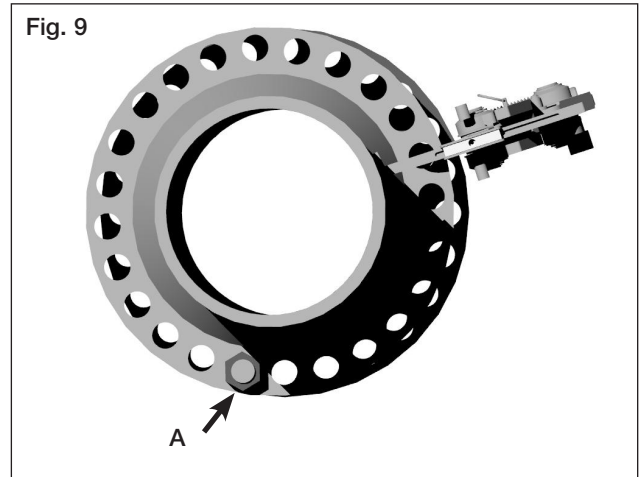
### 8.1 The recommended operating procedures are:

- Select the most convenient or accessible point on the joint's circumference and attach the tool there. (Follow steps 1 thru 5 in section 7.0).
- In the situation when both flanges are aligned but rotational misalignment is present the ATM-9 is used to push the flanges beyond alignment until one pair of bolt holes become parallel (see point A in Fig. 8).



- Insert the bolt into the bolt hole at point A and then release ATM-9. The load will transfer onto the inserted bolt.

- The ATM-9 can then be attached at another point on the joint's circumference (see Fig. 9) pushing against the inserted bolt. Advance the hydraulic cylinder until another, or all the bolt holes are parallel (see Fig. 10).
- Once the remaining bolts are inserted, the ATM-9 can be removed.



Please note that in some situations the operator may have to 'chase' the misalignment around the joint's circumference and attach the ATM-9 at several different positions to rectify the misalignment. On each occasion the procedures outlined in steps 1 to 7 in section 7.0 should be followed.

## 9.0 DISMANTLING THE ATM-9

- Once alignment is achieved, all work on the joint finished, and bolt-up completed (apart from the bolt hole in which the ATM-9 is located), the tool can be removed from the joint by reversing steps 1 thru 5 in section 7.0.
- Care should be taken not to drop any of the component parts when removing them from the aligned joint. This action will prevent injuries personnel.

**Note:** Refer to the ATM-9 repair parts sheet for complete parts list and assembly diagrams.



## 10.0 INSPECTION AND EXAMINATION

- After finishing the job and before the ATM-9 is placed back into service, the completeness of the tool must be established and items examined to ensure that they are serviceable.
- Any missing or damaged items are to be replaced as soon as possible and prior to the tool being used again.
- Grease all moving parts regularly. Refer to section 12.0, Lubrication and Maintenance.
- Cap or plug all open hydraulic fittings to prevent dirt entry. Be sure that pump air vent cap is in the “closed” position.
- Ensure rollers and pins remain grit free.
- Return all items to the carrying case when not in use.

## 11.0 STORAGE

- Cap or plug all open hydraulic fittings.
- Smear machined surfaces with grease.
- Store the ATM-9 in a cool dry place.

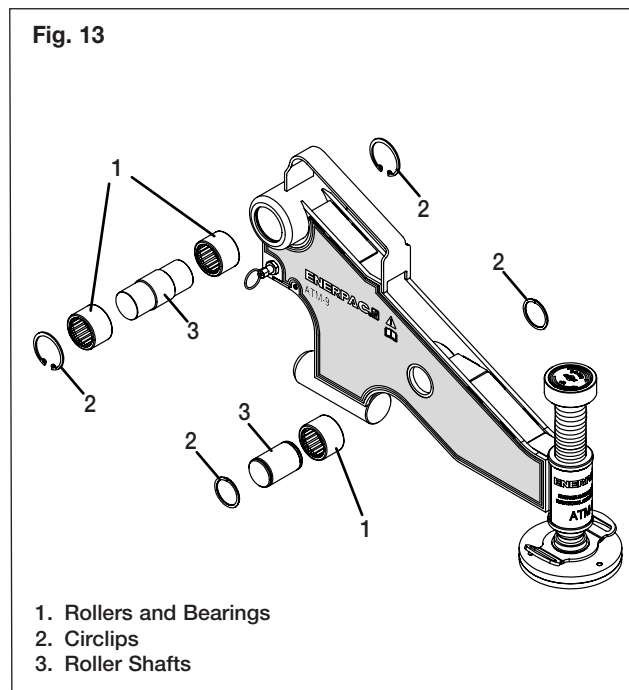
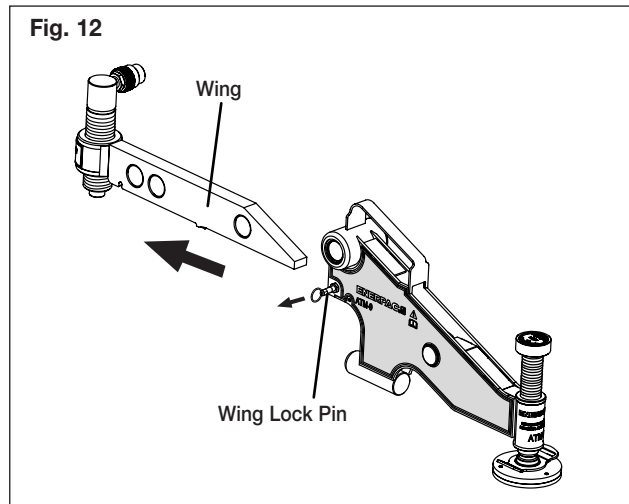
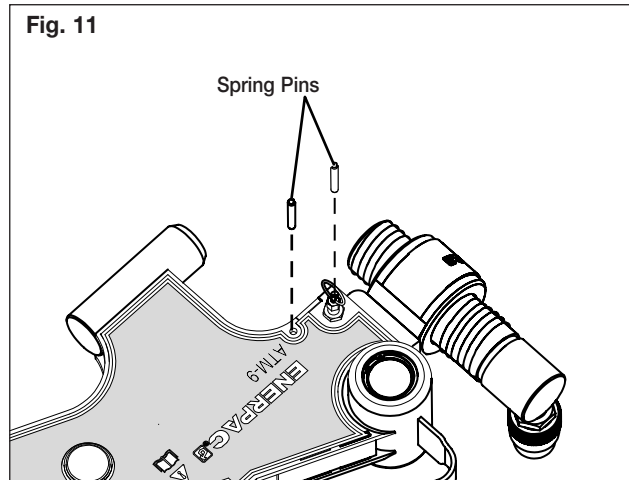
## 12.0 LUBRICATION AND MAINTENANCE

Use Mobilgrease XHP™ 222 Special grease or an equivalent good quality high load bearing grease.

Always ensure that the wing of the tool is grit-free and that the rollers rotate freely and are well lubricated (see Fig. 13). This will enhance the tool’s performance and help prolong its service life.

Clean, inspect and lubricate the ATM-9 as described in the following steps:

- STEP 1. Place tool flat on work bench.
- STEP 2. Remove two spring pins on the front of the main body (see Fig. 11).
- STEP 3. Pull the wing lock pin out. Remove the wing from the main body by sliding it forward (see Fig. 12).
- STEP 4. Remove the circlips using a circlip pliers (see Fig. 13).
- STEP 5. Slide the roller shafts out in order to remove the rollers and bearings for examination. (see Fig. 13).
- STEP 6. Inspect the roller shafts, rollers and bearings for damage, If there is no damage present, then these parts can be cleaned, greased and reassembled (reverse steps 1 through 5).



## 13.0 TROUBLESHOOTING

### Problem 1:

The hydraulic cylinder is sliding on the circumference of the opposite flange as the ATM-9 is aligning the joint.

### Cause:

Grit or dirt on wing, rollers or bearings, wing is at full extension.

### Solution:

- Ensure the rollers are rotating freely and that there is no restriction to the rollers on the wing surfaces such as dirt or grit.
- Check that the wing is not at full extension when aligning the joint.
- Ensure that there is enough extension left to allow the ATM-9 to expand as the joint is aligned.

### Problem 2:

The ATM-9 is attached and appears to be functioning properly, but the joint will not align.

### Cause:

- There may be air in the hydraulic system restricting the force on the flanges.
- There may be something restricting the joint at a point close to the flanges. The joint may require more than 9 ton [90 kN] pressure to align.

### Solution:

- See air lock removal instructions in section 14.
- Check the area around the joint to establish if there is an obstruction to the joint.
- If the joint requires more force than that of the 9 ton [90 kN] capacity of the tool, then another method to align the joint should be adopted.

## 14.0 AIR LOCK REMOVAL

Remove air as described in the following steps:

- Remove the air vent cap on top of the hydraulic pump and check hydraulic oil level to ensure there is enough oil to advance the cylinder.
- Replace air vent cap, but do not tighten the cap. The cap must remain loose (in the "vent" position) to allow air to enter and leave the pump during use. The cap should only be tightened fully when the tool is to be returned to the carrying case after use.
- With the air vent cap loose, connect the pump to the tool with the hydraulic hose supplied within the carrying case.

- Stand the tool on a level surface, hold the hydraulic pump above the tool, close the release valve on the pump, and prime the pump to advance the hydraulic cylinder until the cylinder is fully advanced and a small pressure is achieved.
- With the hydraulic pump held above the tool, open the release valve allowing the cylinder to retract fully back. While the cylinder is retracting any air that is within the system will be forced up to the pump and vented out through the air vent cap.
- Repeat the above procedure three or four times to ensure that all air is removed and the tool will reach full working pressure.

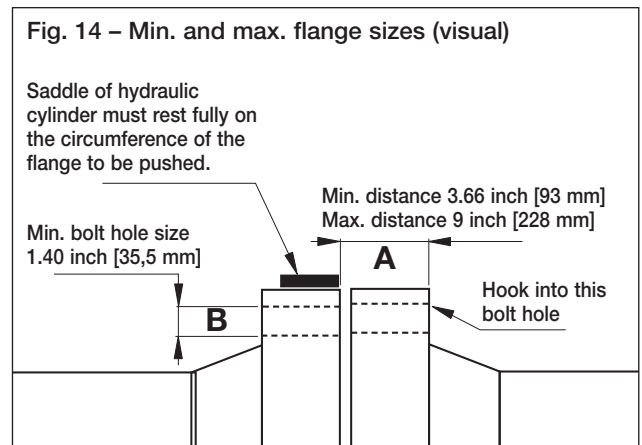
## 15.0 MINIMUM / MAXIMUM EXTENSION

Refer to section 18.0, Weights and Dimensions, for minimum and maximum extension information.

## 16.0 APPLICATION RANGE

Two basic dimensions, A and B, will determine if the ATM-9 can be used to align the joint. If the flange joint to be aligned is between 3.66 inch [93 mm] and 9 inch [228 mm] as illustrated by (A), has a bolt hole size of 1.40 inch [35,5 mm] or greater (B), then the ATM-9 can be attached and alignment achieved (see fig. 14).

See charts in section 17: by flange type, class and diameter.



## 17.0 RANGE OF APPLICATION TABLES

### 17.1 BS10 Flange Range of Application

CLASS A	NPS	3 1/2"	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"	26"	27"	29"	30"	33"	35"	36"	39"	42"	45"	48"	54"	60"	66"	72"		
	TOOL	ATM-2																																					
CLASS D	NPS	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"	29"	30"	33"	35"	36"	39"	42"	45"	48"	54"	60"	66"	72"	78"	84"	96"	108"	120"
	TOOL	ATM-4																																					
CLASS E	NPS	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"	27"	29"	30"	33"	35"	36"	39"	42"	45"	48"		
	TOOL	ATM-2																																					
CLASS F	NPS	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"	27"	29"	30"	33"	35"	36"	39"	42"	45"	48"		
	TOOL	ATM-4																																					
CLASS H	NPS	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"												
	TOOL	ATM-2																																					
CLASS J	NPS	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"	21"	22"	23"	24"												
	TOOL	ATM-4																																					
CLASS K	NPS	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"															
	TOOL	ATM-2																																					
CLASS R	NPS	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	12"	13"	14"	15"	16"	17"	18"	19"	20"															
	TOOL	ATM-4																																					
CLASS S	NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"	16"																
	TOOL	ATM-2																																					
CLASS T	NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"																			
	TOOL	ATM-2												ATM-4												ATM-9													

	SUITABLE FOR ENERPAC ATM-2 TOOL
	SUITABLE FOR ENERPAC ATM-4 TOOL
	SUITABLE FOR ENERPAC ATM-9 TOOL
	NOT SUITABLE FOR ANY ENERPAC ATM TOOL

Note: Models ATM-2 and ATM-4 shown for reference purposes only.

### 17.2 API6BX Weld Neck Flange Range of Application

CLASS 2K	NPS	1 13-16"	2 1-16"	2 9-16"	3 1-8"	4 1-16"	5 1-8"	7 1-16"	9"	11"	13.5-8"	16.3-4"		
	TOOL	ATM-2		ATM-4									ATM-9	
CLASS 3K	NPS	1 13-16"	2 1-16"	2 9-16"	3 1-8"	4 1-16"	5 1-8"	7 1-16"	9"	11"	13.5-8"	16.3-4"		
	TOOL	ATM-2		ATM-4									ATM-9	
CLASS 6K	NPS	1 13-16"	2 1-16"	2 9-16"	3 1-8"	4 1-16"	5 1-8"	7 1-16"	9"	11"	13.5-8"	16.3-4"		
	TOOL	ATM-4		ATM-9										

### 17.3 API6B Weld Neck Flange Range of Application

CLASS 2K	NPS	2 1-16"	2 9-16"	3 1-8"	4 1-16"	5 1-8"	7 1-16"	9"	11"	13.5-8"	16.3-4"	21 1-4"
	TOOL	ATM-2		ATM-4								
CLASS 3K	NPS	2 1-16"	2 9-16"	3 1-8"	4 1-16"	5 1-8"	7 1-16"	9"	11"	13.5-8"	16.3-4"	21 1-4"
	TOOL	ATM-2		ATM-4								
CLASS 6K	NPS	2 1-16"	2 9-16"	3 1-8"	4 1-16"	5 1-8"	7 1-16"	9"	11"	13.5-8"	16.3-4"	21 1-4"
	TOOL	ATM-2		ATM-4								



### 17.0 RANGE OF APPLICATION TABLES (Continued)

#### 17.4 ASME B16.5 Flange Range of Application

CLASS 150	NPS	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	TOOL	ATM-2										ATM-4								
CLASS 300	NPS	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	TOOL	ATM-2										ATM-4								
CLASS 400	NPS	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	TOOL	ATM-2										ATM-4								
CLASS 600	NPS	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	TOOL	ATM-2										ATM-4								
CLASS 900	NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	TOOL	ATM-2										ATM-4								
CLASS 1500	NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	TOOL	ATM-2										ATM-4								
CLASS 2500	NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	TOOL	ATM-2										ATM-4								

#### 17.6 ASME B16.47 Flange Range of Application

CLASS 150	NPS	22"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-4												
CLASS 300	NPS	22"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-4												
CLASS 400	NPS	22"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-4												
CLASS 600	NPS	22"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-4												
CLASS 900	NPS	22"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-4												

#### 17.5 DIN Weld Neck Flange Range of Application

CLASS PN16	NPS	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"	48"	56"	72"	80"
	TOOL	ATM-2																							
CLASS PN25	NPS	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"
	TOOL	ATM-2																							
CLASS PN40	NPS	1/2"	2"	2 1/2"	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"	48"	56"	72"	80"
	TOOL	ATM-2																							
CLASS PN54	NPS	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"	48"	56"
	TOOL	ATM-2																							
CLASS PN100	NPS	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"	48"
	TOOL	ATM-2																							
CLASS PN160	NPS	3/8"	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	7"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"	36"	40"
	TOOL	ATM-2																							

	SUITABLE FOR ENERPAC ATM-2 TOOL
	SUITABLE FOR ENERPAC ATM-4 TOOL
	SUITABLE FOR ENERPAC ATM-9 TOOL
	NOT SUITABLE FOR ANY ENERPAC ATM TOOL

Note: Models ATM-2 and ATM-4 shown for reference purposes only.

17.0 RANGE OF APPLICATION TABLES (Continued)

17.7 SPO Flange Range of Application

CLASS 150	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-2																									
CLASS 300	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-4																									
CLASS 600	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-9																									
CLASS 900	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-4																									
CLASS 1500	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	38"	40"	42"	44"	46"	48"
	TOOL	ATM-9																									
CLASS 2500	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"												
	TOOL	ATM-9																									
CLASS 5000	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"												
	TOOL	ATM-4																									
CLASS 7500	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"												
	TOOL	ATM-9																									
CLASS 10000	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"												
	TOOL	ATM-4																									
CLASS 15000	TOOLINPS 2 1/2"	3	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"												
	TOOL	ATM-9																									

	SUITABLE FOR ENERPAC ATM-2 TOOL
	SUITABLE FOR ENERPAC ATM-4 TOOL
	SUITABLE FOR ENERPAC ATM-9 TOOL
	NOT SUITABLE FOR ANY ENERPAC ATM TOOL

Note: Models ATM-2 and ATM-4 shown for reference purposes only.

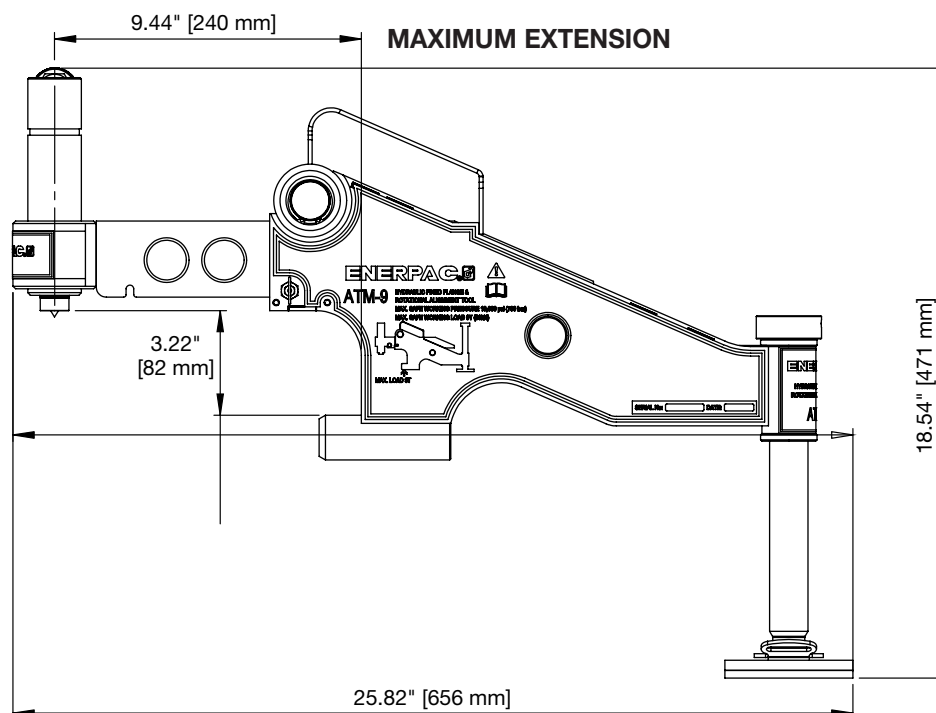
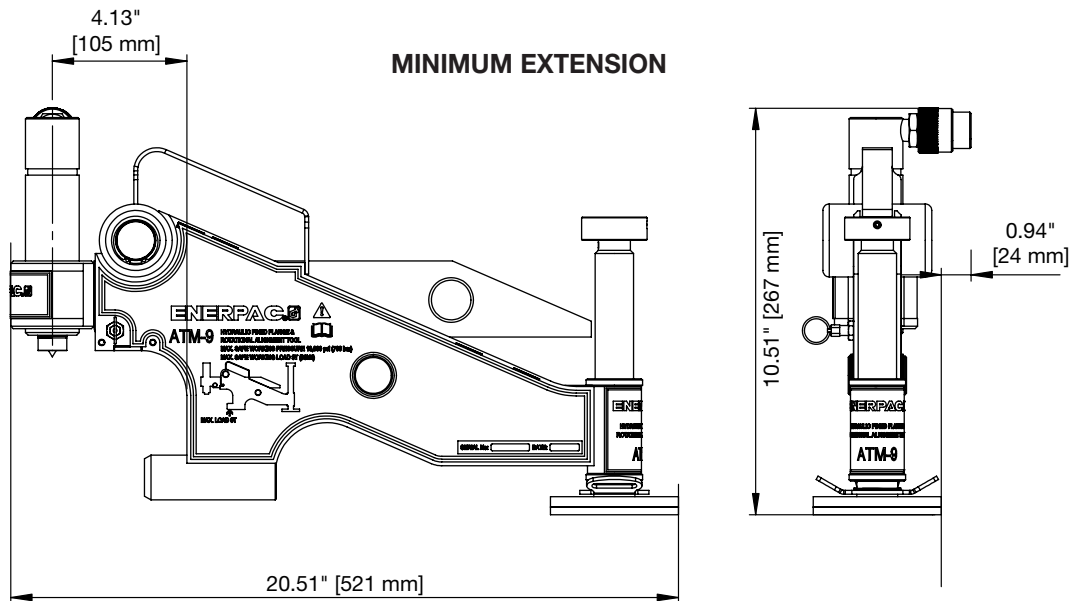
## 18.0 WEIGHTS AND DIMENSIONS

**Note:** Weights shown are approximate.

### WEIGHTS

Tool with hydraulic cylinder and strap .....	33.3 lbs	[15,1 kg]
Hand pump .....	5.3 lbs	[2,4 kg]
Hydraulic hose .....	2.2 lbs	[1,0 kg]
Carrying case .....	19.6 lbs	[8,9 kg]
Gross weight of all items listed above .....	60.4 lbs	[27,4 kg]

### DIMENSIONS



**ENERPAC** 

**TOOLS. SERVICES. SOLUTIONS.**

[www.enerpac.com](http://www.enerpac.com)