

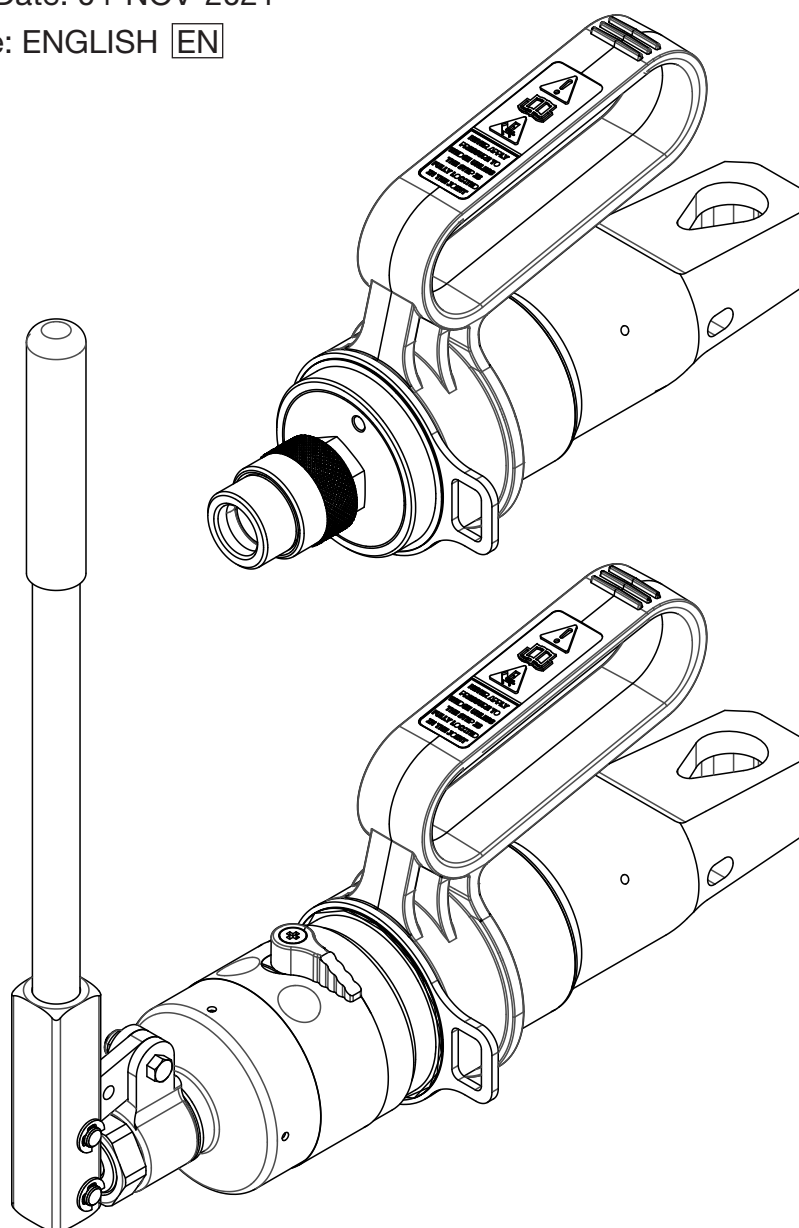
Enerpac NSC/ NSH Nut Splitter Combination/ Hydraulic

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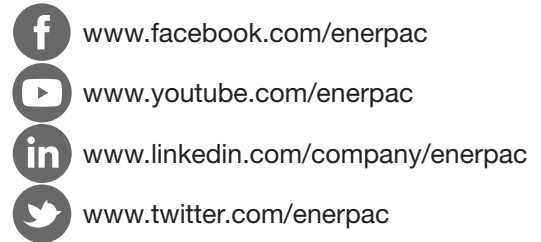
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To reduce the risk of injury, users must read and understand this document before use.

ABOUT US

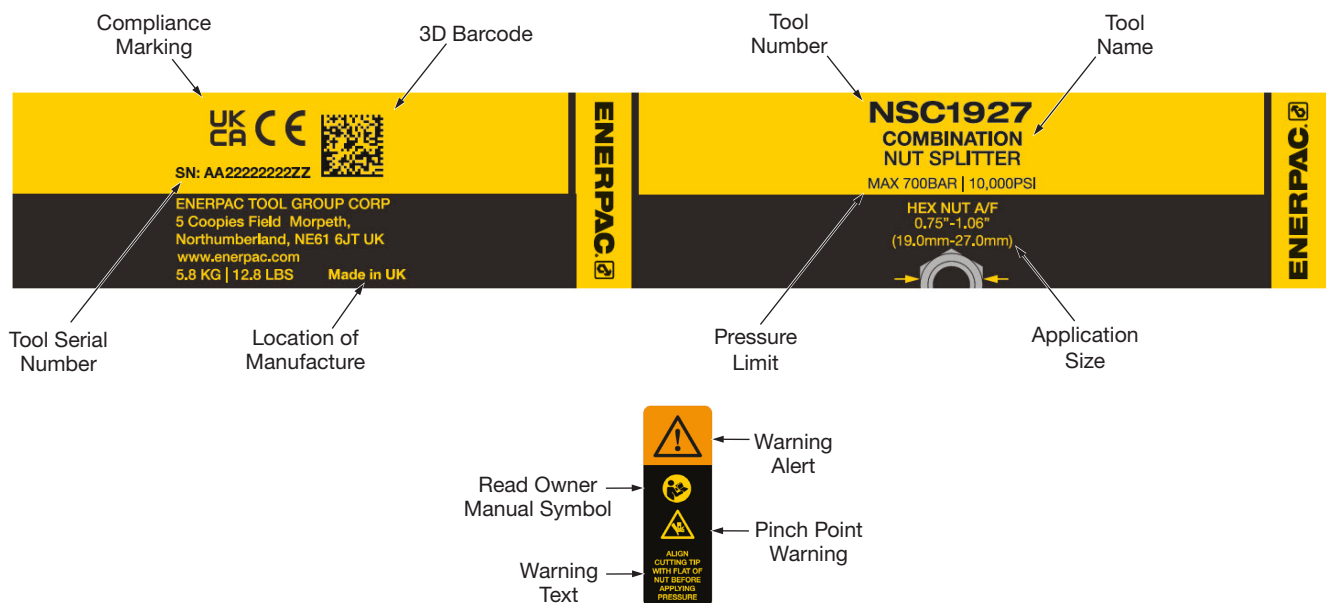
Enerpac is a global market leader in high pressure hydraulic tools, controlled force products, portable machining, on-site services and solutions for precise positioning of heavy loads. As a leading innovator with a 110-year legacy, Enerpac has helped move and maintain some of the largest structures on earth. When safety and precision matters, elite professionals in industries such as aerospace, infrastructure, manufacturing, mining, oil & gas and power generation rely on Enerpac for quality tools, services and solutions. For additional information, visit www.enerpac.com.



WARRANTY

Refer to the Enerpac Global Warranty document for terms and conditions of the product warranty. Such warranty information can be found at www.enerpac.com.

NAMEPLATE



AVAILABLE LANGUAGES

L4504 is available in the following languages, visit www.enerpac.com for a copy.

- Weitere Sprachen finden Sie unter www.enerpac.com.
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1. 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 that any questions or concerns arise, contact Enerpac or a local Enerpac distributor for clarification.

Save these instructions for future use.

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.

1.1 Safety Precautions



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 NS tools or preparing them for use. Always follow all safety precautions and instructions, including those that are contained within the procedures of this manual.
- 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.
- Wear personal protective gear when operating hydraulic equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hats, gloves, or hearing protection (used as appropriate) will reduce personal injuries. The protective clothing must not interfere with safe operation of the tool or restrict the ability to communicate with co-workers.
- Operating procedures will vary, depending on the system arrangement. Always read, follow, and completely understand all manufacturers' instructions when operating pumps, valves and all other devices used with the NS tools. Follow all safety precautions contained in the manufacturer's manuals. Use only for intended purpose.
- To minimize risk of personal injury, keep hands and feet away from the tool and workpiece during operation.
- Do not overload equipment.
- Never apply pressure to a damaged hose, doing so may cause it to rupture.
- Immediately replace worn or damaged parts. Use only genuine Enerpac parts from approved distributors or service centers. Enerpac parts have been engineered and manufactured to be fit-for-purpose.
- Do not handle pressurized hoses or couplings; escaping oil 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.
- Hydraulic circuit must be at zero pressure before couplings are disconnected.

- Never leave the system unattended when under pressure. When the system is under pressure DO NOT STAND IN LINE with the direction of force of the NS tools. This is a danger area. Always keep this area clear of personnel when the system is under pressure.
- Site pump on a secure, flat, level surface. Rope off working area and place warning signs.
- Do not tamper with air pressure relief safety valve on pump.
- Do not remove gauge covers when fitted.
- Check the date of the calibration certification. If the recalibration date has passed, the gauge must be recalibrated.
- If air supply is interrupted, turn off air stop valve on pump.
- The system operating pressure must not exceed the pressure rating of the lowest rated component in the system.
- Maximum allowable pressure for the NS Tool-Series is 10,000 psi [690 bar]. Do not exceed this pressure setting.
- Use only a high-quality non-flammable solvent for cleaning and degreasing parts during wrench repair procedures. To reduce the risk of fire or explosion, do not use flammable solvents.
- It is advised that a pressure gauge(s) is installed in the system when using the NSH tools to monitor operating pressure, to allow the operator to monitor what is happening in the system.
- Care should be taken when using the lanyard to avoid entanglement with body parts.

⚠ CAUTION

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

- 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; 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 hydraulic equipment by the hoses or couplers. Use only the designated carrying handles.
- Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings.

- Lubricate NS tools as directed in this manual prior to operation. Use only approved lubricants of high quality, following the lubricant manufacturer's instructions.
- Only use the designated anchor point for fixing the lanyard. Do not attach the lanyard to the plastic handle.

NOTICE

Failure to observe and comply with the following precautions could result in property damage and/or void the product warranty.

- Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Enerpac Authorized Service Centre in your area.
- It is strongly recommended that operators always use Enerpac pumps and hoses.
- Always use Enerpac replacement parts.
- Always follow the inspection and maintenance instructions contained in this manual. Perform inspection and maintenance after use, and at regular intervals.
- Rope off working area and place warning signs.
- To help ensure proper operation and best performance, use of Enerpac oil is strongly recommended
- The vibration total value to which this tool is subjected does not exceed 2.5 m/s².

2. Compliance Statement(s)

2.1 Conformance to National and International Standards

•NSC1927 •NSC2432 •NSH1927 •NSH2432
•NSH3646 •NSH5065 •NSH6575



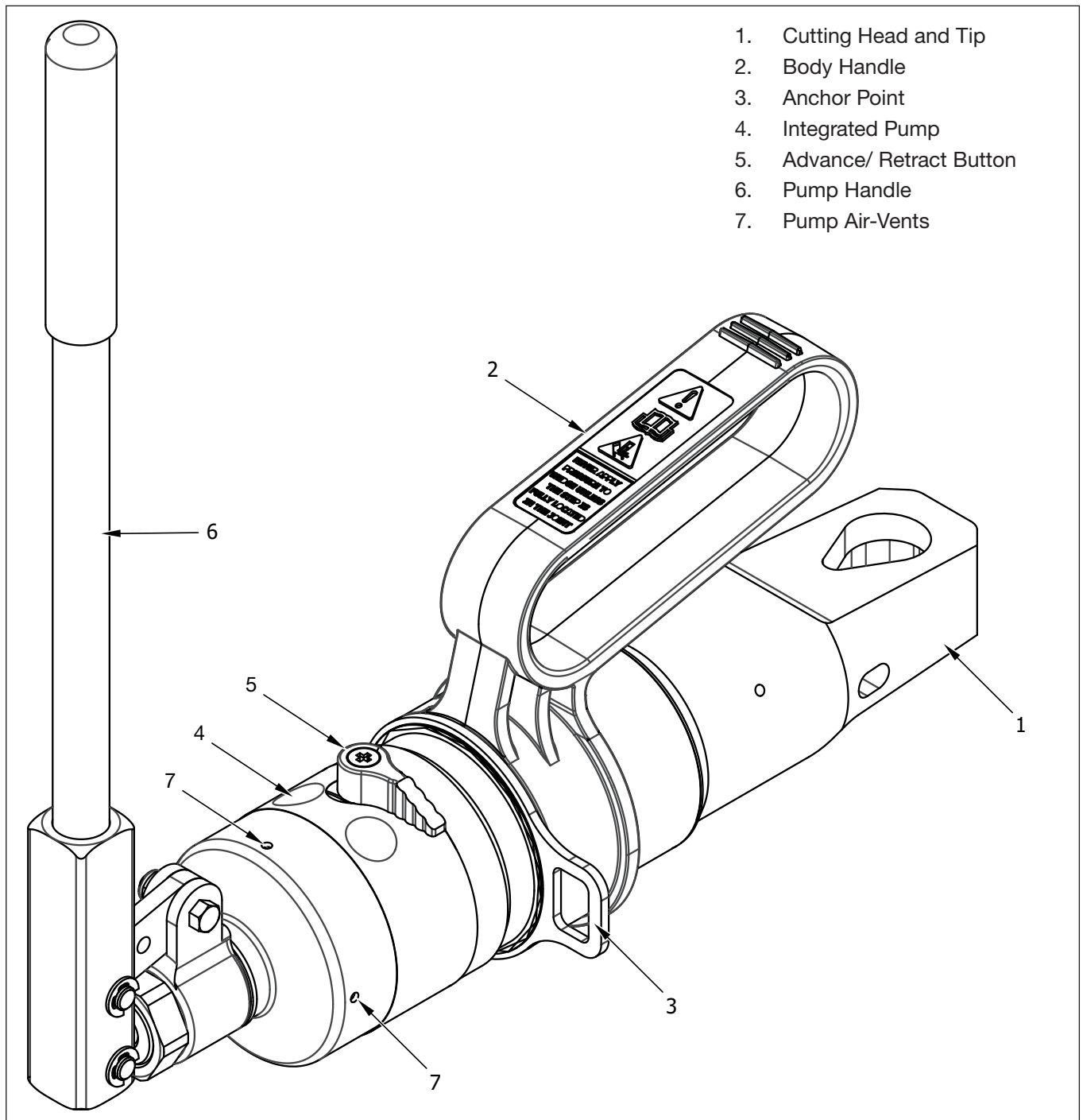
These tools conform with
the requirements for
CE and UKCA.

Enerpac declares that the product(s) have been tested and conforms to applicable standards and the product(s) are compatible to all EU and UK Requirements.

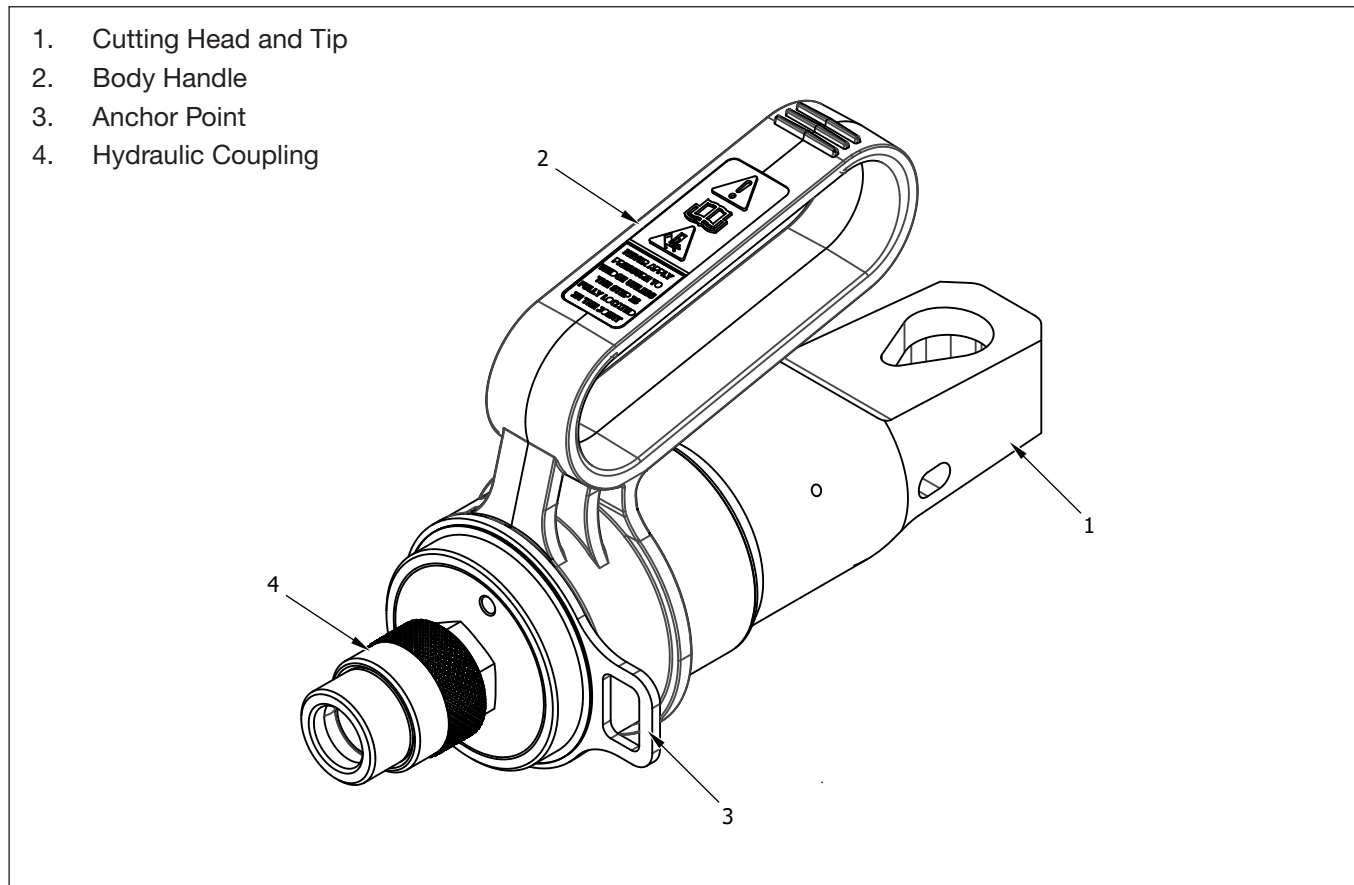
Copies of the EU Declaration as well as the UK Self-Declaration are enclosed with each shipment.

3. Features & Components

3.1 NSC Feature Diagram



3.2 NSH Feature Diagram



3.3 Operating Conditions

Minimum Cutting Tip Contact Temperature: -20 °C

Maximum Cutting Tip Contact Temperature: 70 °C

3.4 Kit Contents

3.4.1 NSC1927 Kit Contents

1 x NSC1927 Nut Splitter

1 x NSC1927 Spare Cutting Tip

1 x Safety Lanyard

1 x Operation and Maintenance Manual

1 x Carry Case

Carry Case Dimensions: 580 mm x 350 mm x 180 mm
[22.8" x 13.8" x 7.1"]

Tool only Weight: 5.8 kg [12.8 lb]

Gross Kit Weight: 9.0 kg [20.0 lb]

3.4.2 NSC2432 Kit Contents

1 x NSC2432 Nut Splitter

1 x NSC2432 Spare Cutting Tip

1 x Safety Lanyard

1 x Operation and Maintenance Manual

1 x Carry Case

Carry Case Dimensions: 580 mm x 350 mm x 180 mm
[22.8" x 13.8" x 7.1"]

Tool only Weight: 6.3 kg [13.9 lb]

Gross Kit Weight: 9.4 kg [20.7 lb]

3.4.3 NSH1927 Kit Contents

1 x NSH1927 Nut Splitter
1 x NSH1927 Spare Cutting Tip
1 x Safety Lanyard
1 x Operation and Maintenance Manual
1 x Carry Case

Carry Case Dimensions: 580 mm x 350 mm x 180 mm
[22.8" x 13.8" x 7.1"]
Tool only Weight: 3.5 kg [7.7 lb]
Gross Kit Weight: 6.8 kg [15.0 lb]

3.4.4 NSH2432 Kit Contents

1 x NSH2432 Nut Splitter
1 x NSH2432 Spare Cutting Tip
1 x Safety Lanyard
1 x Operation and Maintenance Manual
1 x Carry Case

Carry Case Dimensions: 580 mm x 350 mm x 180 mm
[22.8" x 13.8" x 7.1"]
Tool only Weight: 4.0 kg [8.8 lb]
Gross Kit Weight: 7.1 kg [16.7 lb] 5.5

3.4.5 NSH3646 Kit Contents

1 x NSH3646 Nut Splitter
1 x NSH3646 Spare Cutting Tip
1 x Safety Lanyard
1 x Operation and Maintenance Manual
1 x Carry Case

Carry Case Dimensions: 580 mm x 350 mm x 180 mm
[22.8" x 13.8" x 7.1"]
Tool only Weight: 6.9 kg [15.2 lb]
Gross Kit Weight: 10.2 kg [22.5 lb]

3.4.6 NSH5065 Kit Contents

1 x NSH5065 Nut Splitter
1 x NSH5065 Spare Cutting Tip
1 x Safety Lanyard
1 x Operation and Maintenance Manual
1 x Carry Case

Carry Case Dimensions: 460 mm x 300 mm x 280 mm
[18.1" x 11.8" x 11.0"]
Tool only Weight: 10.9 kg [24 lb]
Gross Kit Weight: 17.7 kg [39 lb]

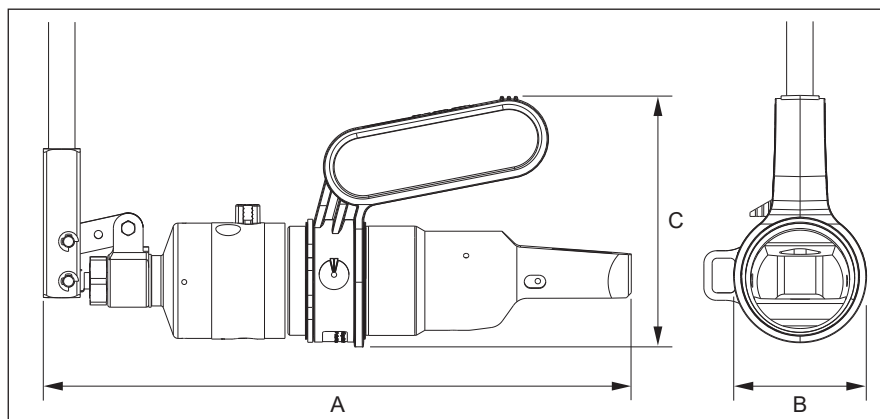
3.4.7 NSH6575 Kit Contents

1 x NSH6575 Nut Splitter
1 x NSH6575 Spare Cutting Tip
1 x Safety Lanyard
1 x Operation and Maintenance Manual
1 x Carry Case

Carry Case Dimensions: 460 mm x 270 mm x 285 mm
[18.1" x 10.6" x 11.2"]
Tool only Weight: 24.5 kg [54.0 lb]
Gross Kit Weight: 31.0 kg [68.4 lb]

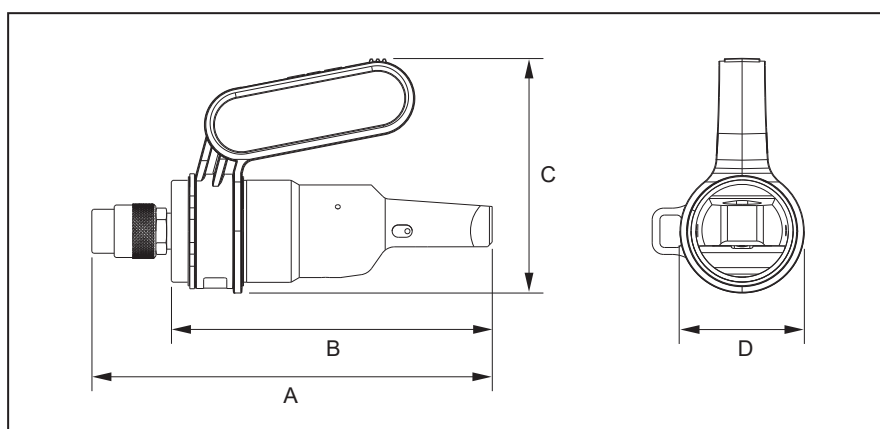
4. Technical Product Data

4.1 NSC Dimensions



Model Number	Dimensions			Tool Weight (kg)	Kit Weight (kg)
	A	B	C		
NSC1927	353 mm [13.9"]	81 mm [3.2"]	152 mm [6.0"]	5.8 kg [12.8 lb]	9.0 kg [20.0 lb]
NSC2432	370 mm [14.6"]	81 mm [3.2"]	152 mm [6.0"]	6.3 kg [13.9 lb]	9.4 kg [20.7 lb]

4.2 NSH Dimensions



Model Number	Dimensions				Tool Weight (kg)	Kit Weight (kg)
	A	B	C	D		
NSH1927	258 mm [10.1"]	213 mm [8.4"]	152 mm [6.0"]	81 mm [3.2"]	3.5 kg [7.7 lb]	6.8 kg [15.0 lb]
NSH2432	265 mm [10.4"]	220 mm [8.7"]	152 mm [6.0"]	81 mm [3.2"]	4.0 kg [8.8 lb]	7.1 kg [16.7 lb]
NSH3646	290 mm [11.4"]	239 mm [9.4"]	169 mm [6.7"]	93 mm [3.7"]	6.9 kg [15.2 lb]	10.2 kg [22.5 lb]
NSH5065	377 mm [14.84"]	322 mm [12.68"]	210 mm [8.27"]	185 mm [7.28"]	10.9 kg [24 lb]	17.7 kg [39 lb]
NSH6575	396 mm [15.6"]	345 mm [13.6"]	220 mm [8.7"]	202 mm [7.9"]	24.5 kg [54.0 lb]	31.0 kg [68.4 lb]

5. Operation

5.1 Tool Setup

Enerpac Nut Splitter Tools are suited to fit a range of nut sizes and grades and the right tool should be selected prior to commencing work detailed in Section 5. Operation.

⚠ CAUTION A thick grease should be applied to the Cutting Tip **before every cut**. This will ease the splitting operation, prolong the life of the Cutting Tip and limit the risk of sparking and debris projectiles.

5.2 Tool Selection

⚠ CAUTION It is important that the correct tool is selected for each nut and the correct Cutting Tip is used for each tool. Each tool in the Nut Splitter range comes with the appropriate Cutting Tips for that tool. Please refer to the table below to choose the correct tool for your application.

NS TOOLS	METRIC STUD SIZE	METRIC NUT A/F SIZE
NSC1927	M12, M16, M18	19 mm to 27 mm
NSC2432	M16, M20, M22	24 mm to 32 mm
NSH1927	M12, M16, M18	19 mm to 27 mm
NSH2432	M16, M20, M22	24 mm to 32 mm
NSH3646	M24, M27, M30	36 mm to 46 mm
NSH5065	M33, M36, M39, M42	50 mm to 65 mm
NSH6575	M42, M45, M48	65 mm to 75 mm

NS TOOLS	UN HEAVY HEX STUD SIZE	UNC HEAVY NUT A/F SIZE
NSC1927	1/2", 5/8"	0.75" to 1.06"
NSC2432	3/4", 7/8"	0.94" to 1.26"
NSH1927	1/2", 5/8"	0.75" to 1.06"
NSH2432	3/4", 7/8"	0.94" to 1.26"
NSH3646	7/8", 1", 1-1/8"	1.42" to 1.81"
NSH5065	1-1/4", 1-3/8", 1-1/2", 1-5/8"	2" to 2.56"
NSH6575	1-5/8", 1-3/4", 1-7/8"	2.56" to 2.95"

NOTE: Maximum allowable hardness to split is ASTM A194 Gr 2H. Not to be used on square nuts or stainless steel.

If the specification of the nut is unknown then a vernier calliper or measure tape should be used to determine the Across-Flats (A/F) size of the nut to be split and the correct tool.

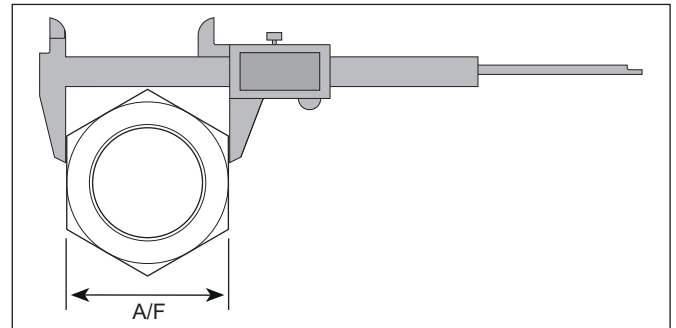


Figure 1:

5.3 NSC Hydraulic Tool Operation

Prior to operation, ensure the air-vent in the integrated pump is not obstructed. Any obstruction in the air-vent can cause a vacuum in the system which can limit the cylinder's travel.

The NSC1927 and NSC2432 Nut Splitter use an integrated hydraulic pump to drive the cylinder and advance the Cutting Tip to split the nut. The hydraulic pressure is applied using the integrated pump, enabling accurate control of the force applied.

The integrated pump has a control lever which allows the user to select advance (+) or retract (-).

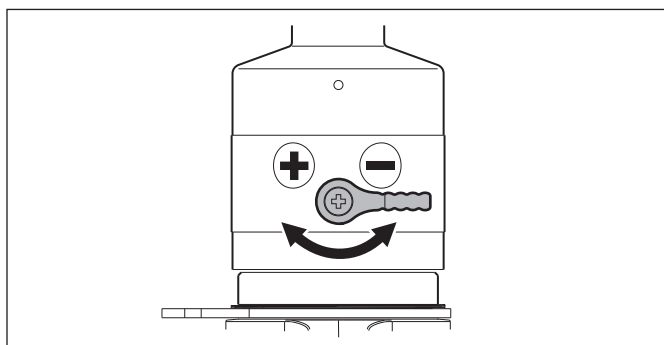


Figure 2:

Actuating NSC Tools

When advance (+) is selected, pumping the handle will advance the piston with the Cutting Tip and split the nut.

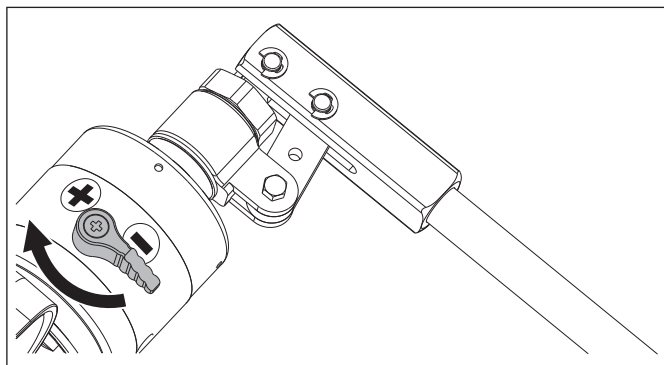


Figure 3:

Retracting NSC Tools

Selecting Retract (-) will de-pressurise the cylinder and cause it to retract under the force of its internal spring. The handle doesn't need to be pumped to retract the cylinder.

Using NSC Tools

Position the tool as per Section 5.7.

When the pump is operated the piston and the Cutting Tip will advance. Ensure the tool is flat against the flange and the Cutting Tip perpendicular to the nut throughout the operation. Slowly actuate the Nut Splitter to advance the Cutting Tip against a flat of the nut and increase the pressure until the nut splits.

Releasing the pump will de-pressurise the cylinder and cause it to retract under the force of its internal spring.

It is likely that the nut will require a second split to fully remove the nut from the stud. Ideally a second split should be carried out at 180° to the first cut, splitting the nut in half to enable removal.

After the nut has been split, always check the Cutting Tip for damage and replace if required before positioning the tool on another nut.

CAUTION Split nuts often have sharp edges and should be handled with great care.

5.4 NSH Hydraulic Tool Operation

NSH range of Nut Splitters require an external hydraulic pump to drive the cylinder and advance the Cutting Tip to split the nut.

CAUTION Maximum allowable pressure for the NSH Tools is 10,000 psi [690 bar]. Do not exceed this pressure setting.

CAUTION Pump hydraulic system should include a PRV (relief valve) included in the hydraulic circuit.

NOTICE Consult the manufacturer's Instruction Manual for the hydraulic pump operation.

Using NSH Tools

Position the tool as per Section 5.7

When the pump is operated the piston and the Cutting Tip will advance. Ensure the tool is flat against the flange and the Cutting Tip perpendicular to the nut throughout the operation. Slowly actuate the Nut Splitter to advance the Cutting Tip against a flat of the nut and increase the pressure until the nut splits.

NOTICE

- Air or electric powered pumps only: Once the blade has stopped cutting at 1000 psi [69 bar], the pressure should be gradually increased using the pressure regulator on the pump. Allow adequate time for the blade to cut before increasing pressure.
- If pressure is increased too quickly, blade damage may result. Excessive pressure may also cause the nut splitter's internal relief valve to open, resulting in oil leakage from the oil bleed hole located on the underside of the blade holder.
- On larger nuts, it may be helpful to periodically retract and re-lubricate the blade. This will reduce friction and increase blade efficiency.

Releasing the pump will de-pressurise the cylinder and cause it to retract under the force of its internal spring.

It is likely that the nut will require a second split to fully remove the nut from the stud. Ideally a second split should be carried out at 180° to the first cut, splitting the nut in half to enable removal.

After the nut has been split, always check the Cutting Tip for damage and replace if required before positioning the tool on another nut.

CAUTION Split nuts often have sharp edges and should be handled with great care.

5.5 Handle

The handle can be swivelled around the central axis of the tool, to improve access to the nut and allow the tool to be easily held in the vertical or horizontal orientation.

5.6 Safety Lanyard

NS tools are supplied with a secure anchor point and a safety lanyard. The safety lanyard should be used to minimise the risks associated with the tool dropping.

Attach one end of the safety lanyard to the tool using the supplied shackle. The other end of the safety lanyard should be fixed to a secure point close to the work-site using an appropriate shackle.

Avoid using the safety lanyard as a means for picking up or carrying the tool. Do not fix the safety lanyard to the plastic handle.

The anchor point and safety lanyard have been engineered to safely sustain a drop over the full safety lanyard length. It is recommended that all parts are inspected following a drop incident, as damage may compromise the safety of the tool.

CAUTION Only use the designated anchor point for fixing the safety lanyard. Do not attach the safety lanyard to the plastic handle.

WARNING Care should be taken when using the safety lanyard to avoid entanglement with body parts.

5.7 Positioning The Tool

Prior to splitting the nut, an assessment should be carried out to determine the most appropriate positioning of the tool around the nut.

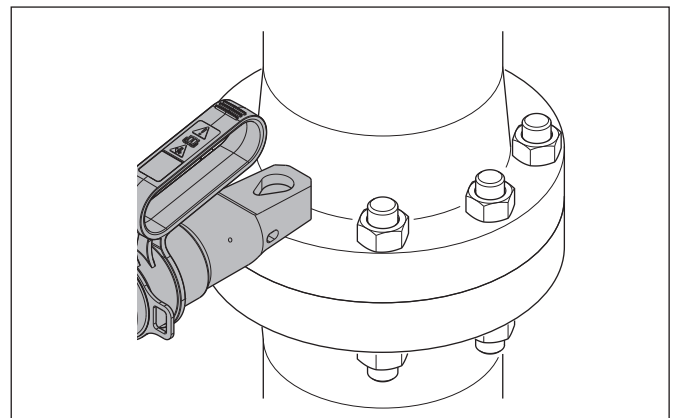


Figure 4:

Place the tool on the nut with the flat surface of the cutting head flat against one of the nut flats and the Cutting Tip centered. Ensure the bottom face of the cutting head sits flat on the same surface that the nut is seated.

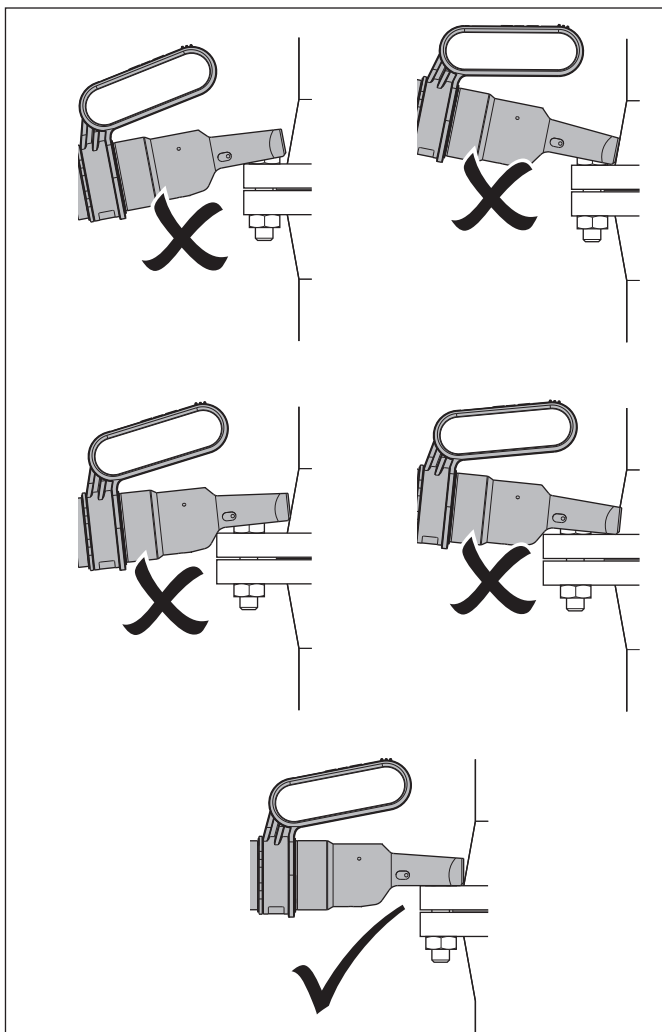


Figure 5:

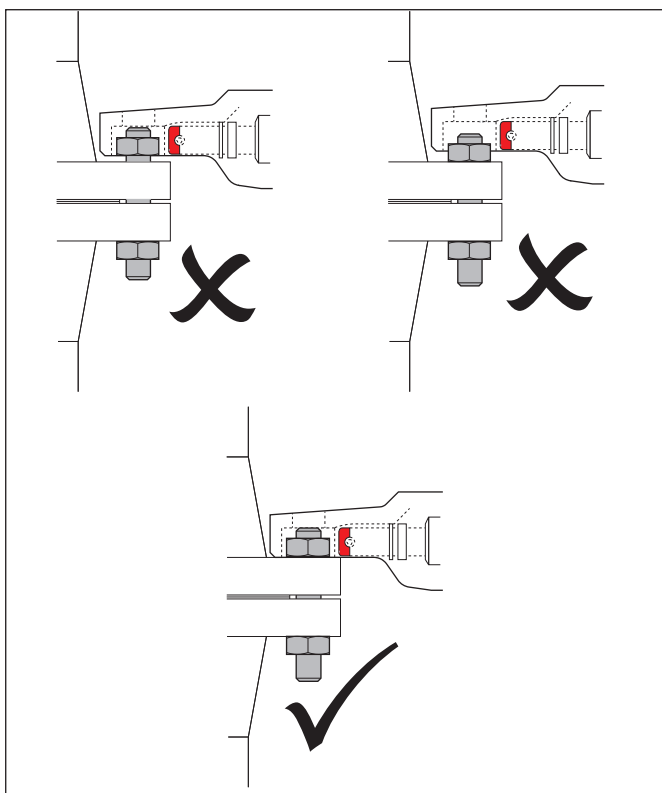


Figure 6:

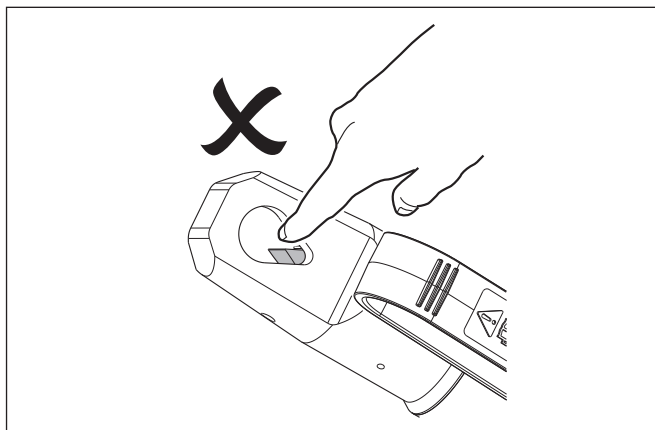


Figure 7:

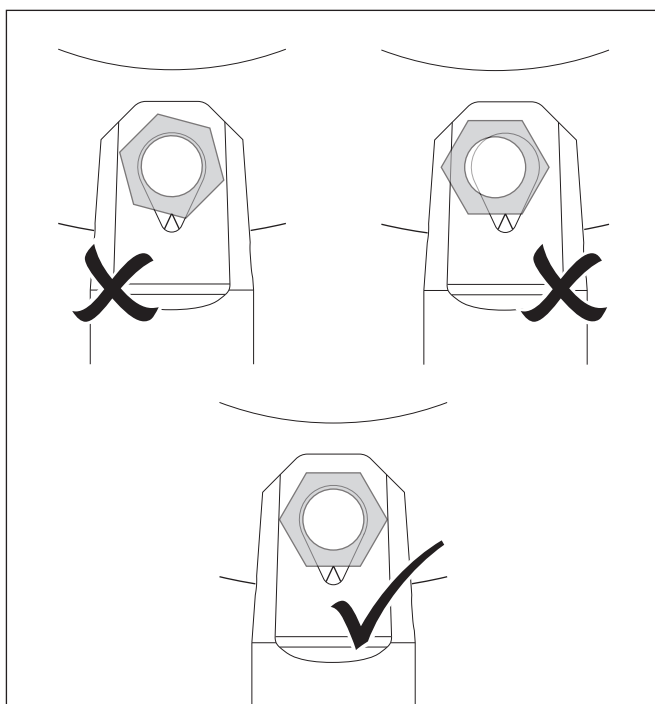


Figure 8:

⚠ CAUTION It is recommended that suitable hearing protection, i.e. ear defenders or ear plugs are worn.

⚠ CAUTION It is recommended that a face shield or suitable eye protection, i.e. safety glasses or goggles are worn.

5.8 Sub-Sea Usage

5.8.1 Using Integrated Pump on THE NSC Subsea

NSC tools are actuated by means of single-acting spring-return hydraulic cylinder and can be used sub-sea providing the following actions are taken:

- The pump release valve is fully opened and remains open until the tool has descended to the working depth. This will allow the pressure to equalise.
- The tool is actuated via the hand-pump by a diver.
- Upon completion of works the release valve is left in the fully-open position until the tool has ascended to the surface.
- The tool and pump are stripped-down, cleaned and lubricated immediately to minimise corrosion.

5.8.2 Using External Pump on THE NSH Subsea

NSH tools require a hydraulic hand pump that is fitted with a sealed-bladder type reservoir system to allow for sub-sea operation.

NSH tools are actuated by means of single-acting spring-return hydraulic cylinder and can be used sub-sea providing the following actions are taken:

1. The gauges and manifolds are removed from the hand-pump and the coupler is fitted directly to the pump outlet.
2. The tool is connected to the pump whilst still top-side.
3. The pump release valve is fully opened and remains open until the tool has descended to the working depth. This will allow the pressure to equalise.
4. The tool is actuated via the hand pump by a diver.
5. Upon completion of works the release valve is left in the fully-open position until the tool has ascended to the surface.
6. The tool and pump are stripped-down, cleaned and lubricated immediately to minimise corrosion.

⚠ CAUTION Please note that the NSH tools cannot be operated from top-side by use of a down-line. The return springs in the hydraulic cylinders do not have sufficient force to retract the piston if used with a down-line from a top-side pump, therefore the standard hydraulic tools will not function correctly and may jam in place if used in this configuration.

6. Storage

NS tools should be stored in a cool dry place. Tools should always be cleaned, serviced and lubricated prior to storage. Ensure that tools are stored in their designated packing cases.

7. Maintenance

7.1 Inspection

A thorough inspection should be carried out prior to usage, storage or transportation to ensure the completeness and condition of the tool.

Inspection should include:

- Visual inspection of the outer parts of the tool, checking for obvious damage, degradation or missing parts,
- Visual inspection of the Cutting-Tip (this may require tool actuation).

Cleaning and servicing should be undertaken as required prior to the tool being used, stored or transported.

7.2 Cleaning

To lightly clean the tool, wipe gently with a damp cloth.

If more thorough cleaning is required (for example following immersion in water) carry out the following cleaning procedure:

- Strip the tool down, observing the exploded diagrams shown in the Section 8.0 Parts List,
- Clean the components using detergent, following the manufacturer's guidelines,
- Rinse the components to remove traces of detergent,
- Dry the components thoroughly.

Inspect, service and lubricate the tool immediately after the cleaning process.

7.3 Cutting Tip Replacement

Ensure the correct Cutting Tip is fitted to the tool and has been checked for damage. Some minor blunting is acceptable, but cracked or chipped Cutting Tips should be replaced.

The Cutting Tip is retained in the piston by the tip retention screw. Unscrew the tip retention screw with a hex-key and pull the Cutting Tip out to replace. Do not apply excessive force when inserting the Cutting Tip into the tool. If the Cutting Tip does not come out easily, slightly extend the piston to gain better access. When replacing the Cutting Tip, the tip retention screw and alignment screw should also be replaced every time.

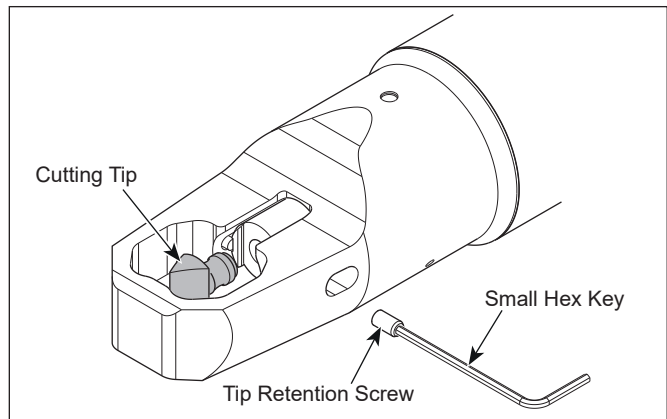


Figure 9:

CAUTION Ensure the tip retention screw is screwed tightly into the piston and the hex key removed before actuating the tool.

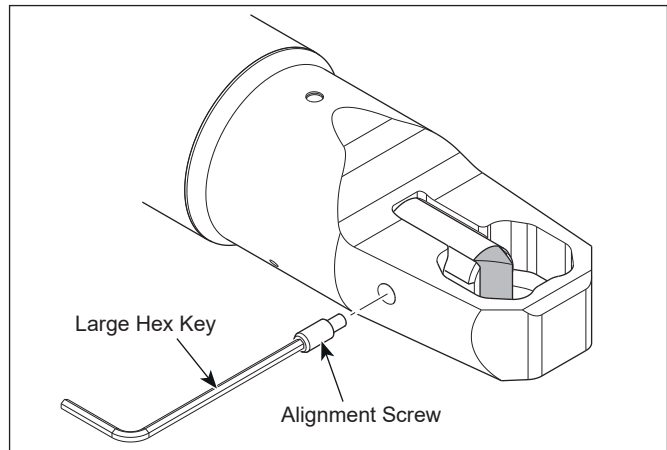


Figure 10:

A thick grease should be applied to the Cutting Tip before every cut. This will ease the splitting operation, prolong the life of the Cutting Tip and limit the risk of sparking and debris projectiles.

7.4 Maintenance

Replace missing, 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.

Do not apply excessive force when inserting the Cutting Tips into the tool. Always replace the tip retention screw and alignment screw when replacing the Cutting Tip.

The alignment screw in the side of the cutting head sits in the slot of the piston and keeps the Cutting Tip aligned. This screw should not be fully tightened; back off the alignment screw by 1/4 turn after insertion.

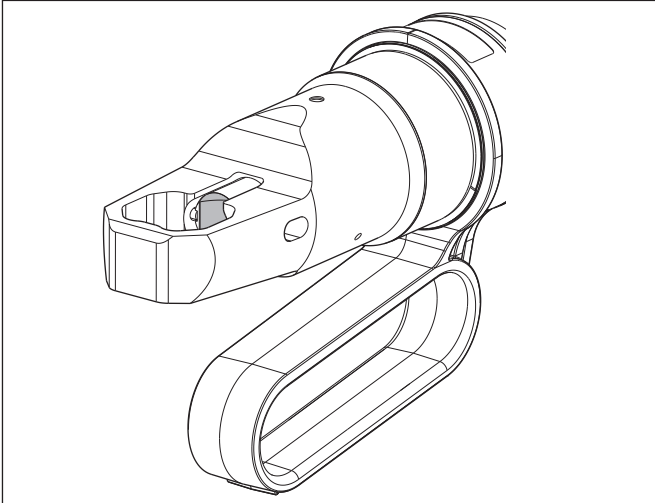


Figure 11:

If topping up or replacing hydraulic oil as part of a service, only use genuine Enerpac Oil.

A thick grease should be applied to the Cutting Tip **before every cut**. This will ease the splitting operation, prolong the life of the Cutting Tip and limit the risk of sparking and debris projectiles.

8. Parts List

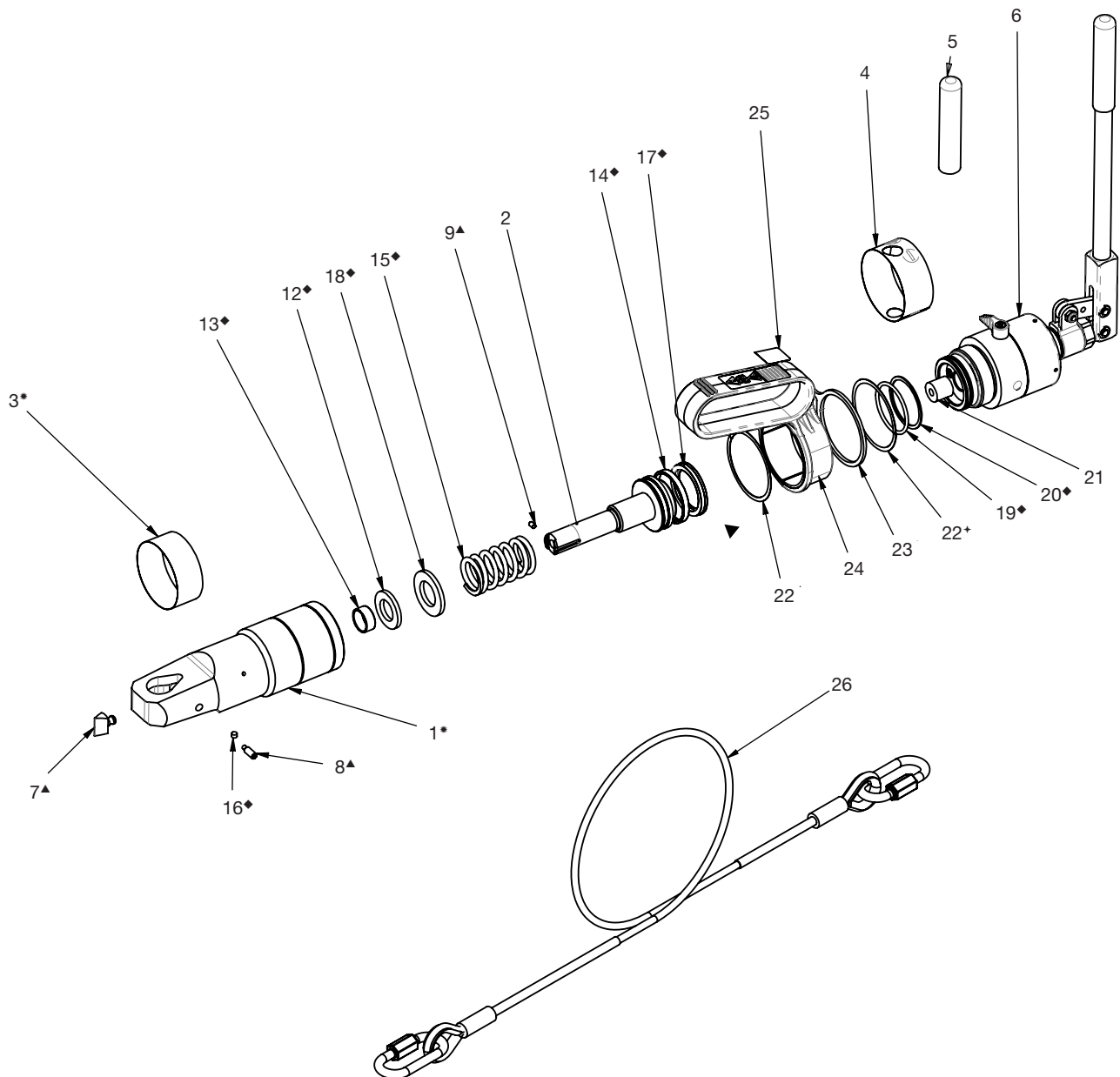
8.1 NCS1927 Nut Splitter Combination Head Exploded Views

Note:

Items marked * are not supplied separately.

Items marked ▲ supplied in NSC1927 Cutting Tip Service Kit NSH1927CTK.

Items marked ◆ supplied in NSC1927 Seal Kit NSH1927SK.



8.2 NSC1927 Nut Splitter Combination Head Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Head	1	✱
2	NSC1927/ NSC2432 Piston	1	DM0875051
3	NSC1927 Body Sticker Wrap	1	✱
4	Decal Integrated Pump Wrap	1	DM0590026
5	Pump Handle Grip	1	DM306502-01
6	Integrated Pump	1	1010100-01
7	NS1927 Cutting Tip	1	▲
8	Alignment Screw	1	
9	M4x6mm Grub Screw	1	
10	3.0 mm Hex Key (not shown)	1	
11	2.0 mm Hex Key (not shown)	1	
12	M20 Flat Washer	1	◆
13	WMU Plain Bushing	1	
14	Piston Bearing Strip	1	
15	Compression Spring	1	
16	Cylinder Vent Plug	1	
17	Piston Lip Seal	1	
18	M24 Flat Washer	1	
19	O-Ring	1	
20	Back-Up Ring	1	
21	Cylinder Nose Adaptor	1	DM0855038
22	Spiral Retaining Ring	2	DM1364049
23	Anchor Point	1	DM0578558
24	Handle	1	DM0575070
25	Handle Sticker	1	DM0876026
26	Lanyard	1	DM0899217
▲ NSC1927 Cutting Tip Service Kit NSH1927CTK		◆ NSC1927 Seal Kit NSH1927SK	
✱ Not supplied separately			

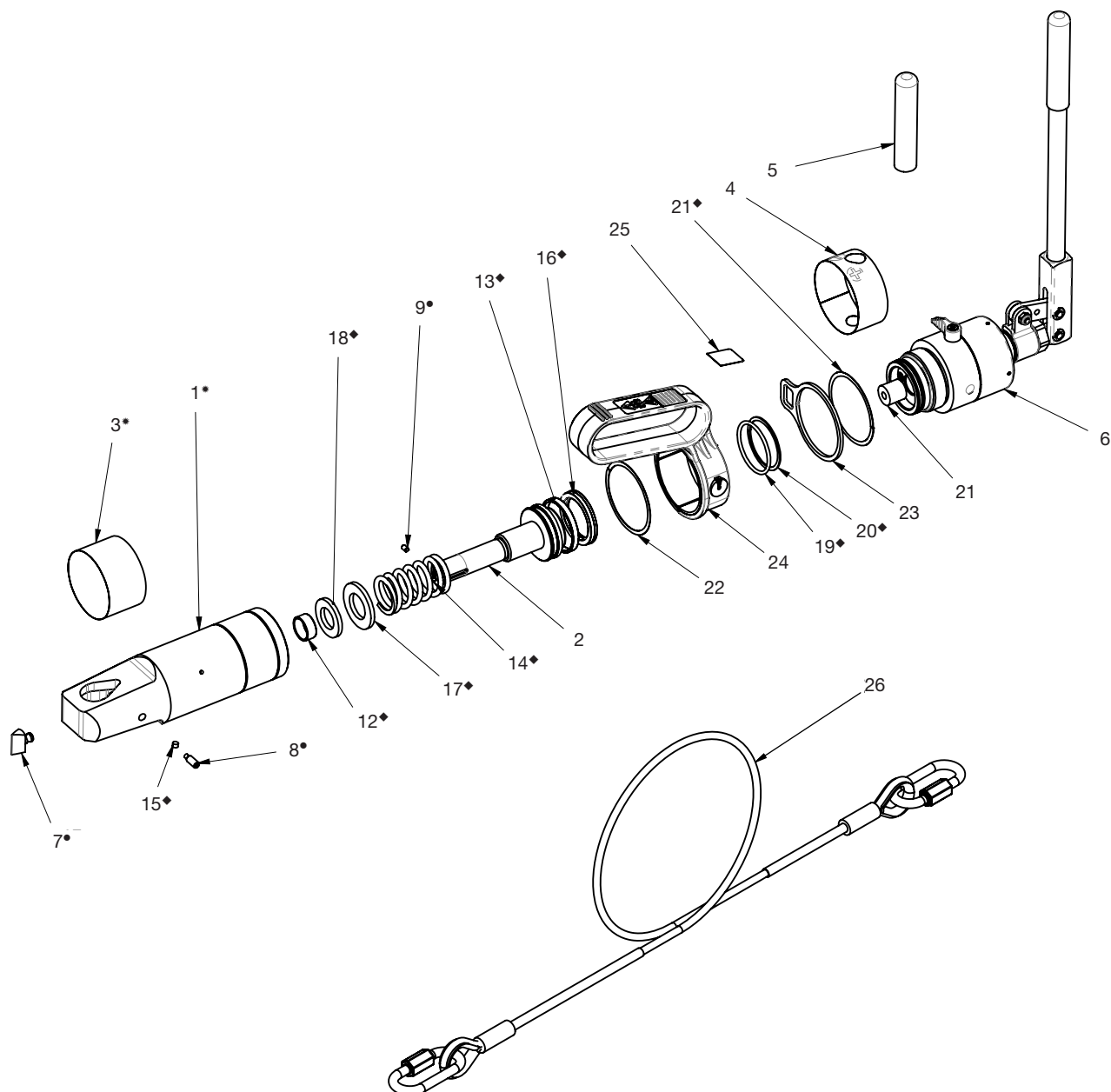
8.3 NSC2432 Nut Splitter Combination Head Exploded Views

Note:

Items marked * are not supplied separately.

Items marked ● supplied in NSC2432 Cutting Tip Service Kit NSH2432CTK.

Items marked ◆ supplied in NSC2432 Seal Kit NSH1927SK.



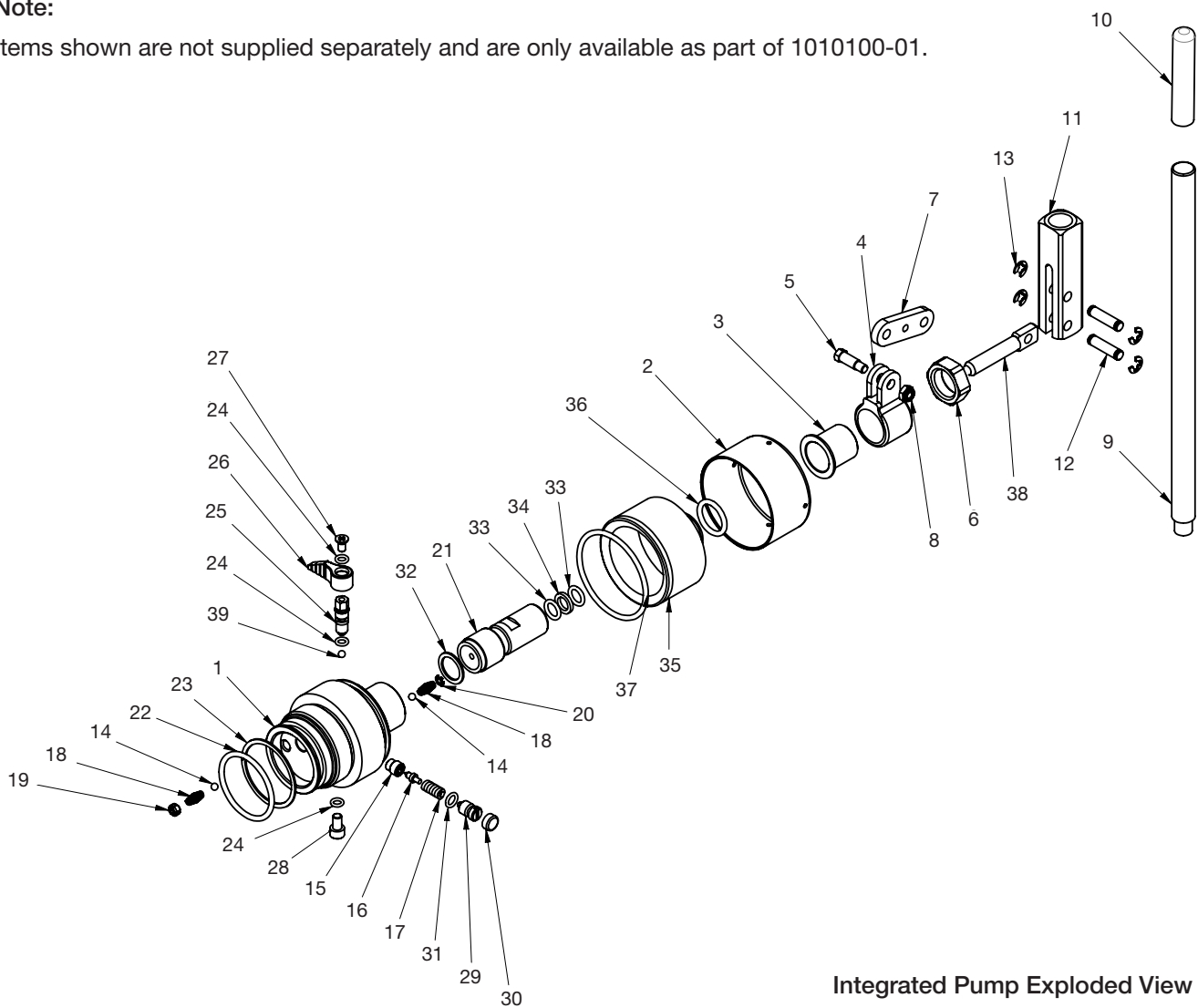
8.4 NSC2432 Nut Splitter Combination Head Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Head	1	✱
2	NSC1927/ NSC2432 Piston	1	DM0875051
3	NSC2432 Body Sticker Wrap	1	✱
4	Decal Integrated Pump Wrap	1	DM0590026
5	Pump Handle Grip	1	DM306502-01
6	Integrated Pump	1	1010100-01
7	NS2432 Cutting Tip	1	●
8	Alignment Screw	1	
9	M4x6mm Grub Screw	1	
10	3.0 mm Hex Key (not shown)	1	
11	2.0 mm Hex Key (not shown)	1	
12	WMU Plain Bushing	1	◆
13	Piston Bearing Strip	1	
14	Compression Spring	1	
15	Cylinder Vent Plug	1	
16	Piston Lip Seal	1	
17	M24 Flat Washer	1	
18	M20 Flat Washer	1	
19	O-Ring	1	
20	Back-Up Ring	1	
21	Cylinder Nose Adaptor	1	DM0855038
22	Spiral Retaining Ring	2	DM1364049
23	Anchor Point	1	DM0578558
24	Handle	1	DM0575070
25	Handle Sticker	1	DM0876026
26	Lanyard	1	DM0899217
● NSC2432 Cutting Tip Service Kit NSH2432CTK		◆ NSC2432 Seal Kit NSH1927SK	
✱ Not supplied separately			

8.5 Integrated Pump Exploded Views

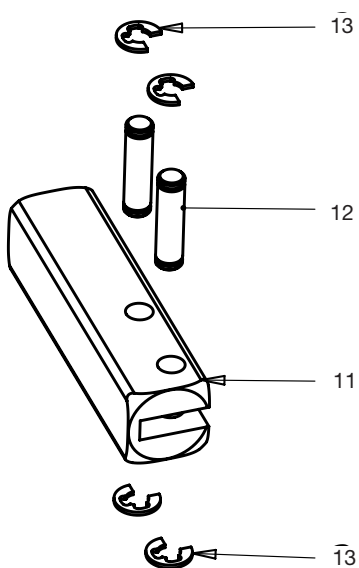
Note:

Items shown are not supplied separately and are only available as part of 1010100-01.

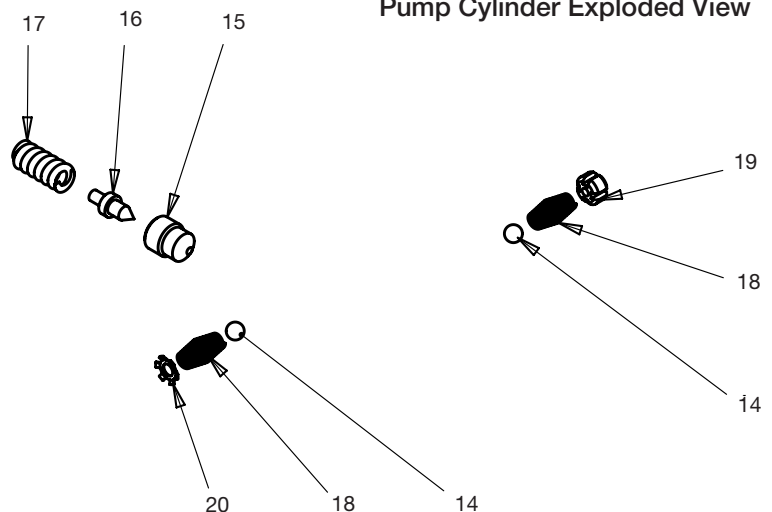


Integrated Pump Exploded View

Handle Clevis Exploded View



Pump Cylinder Exploded View



8.6 Integrated Pump Table of Parts

Item	Description	Qty	Item	Description	Qty
1	Pump Manifold	1	21	Pump Piston Housing	1
2	Pump Bladder Housing	1	22	O-Ring	1
3	Piston Housing Cap	1	23	Back-Up Ring	1
4	Swivel Clevis	1	24	O-Ring	3
5	Clevis Screw	1	25	Relief Valve Screw	1
6	Nylon Locking Nut	1	26	Relief Valve Knob	1
7	Link Connector	1	27	Fixing Screw	1
8	Retaining Nut	1	28	Oil Fill Screw	1
9	Handle Rod	1	29	Overload Cover Screw	1
10	Handle Grip	1	30	Cap	1
11	Handle Clevis	1	31	O-Ring	1
12	Clevis Pin	2	32	Washer	1
13	E-Clip	4	33	O-Ring	2
14	Steel Ball	2	34	Back-Up Ring	1
15	Cone Seat	1	35	Reservoir Bladder	1
16	Cone	1	36	O-Ring	1
17	Long Separator Spring	1	37	O-Ring	1
18	Spring	2	38	Pump Piston Rod	1
19	Screw	1	39	Steel Ball	1
20	Spring Lock	1			

Items listed are not supplied separately and are only available as part of 1010100-01.

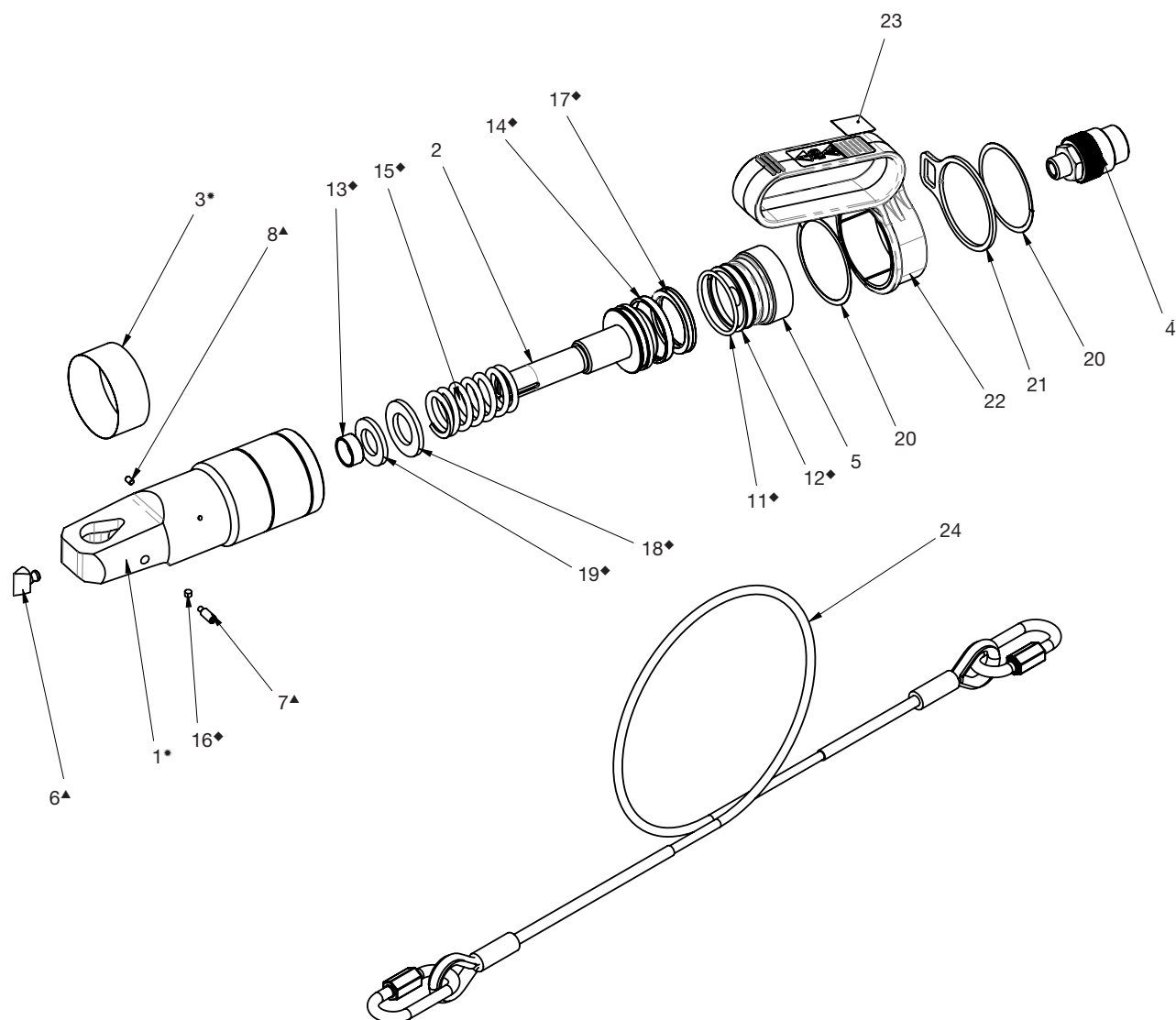
8.7 NSH1927 Hydraulic Head Exploded Views

Note:

Items marked * are not supplied separately.

Items marked ▲ supplied in NSH1927 Cutting Tip Service Kit NSH1927CTK.

Items marked ♦ supplied in NSH1927 Seal Kit NSH1927SK.



8.8 NSH1927 Hydraulic Head Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Head	1	✱
2	NSH1927/ NSH2432 Piston	1	DM0875051
3	NSH1927 Body Sticker Wrap	1	✱
4	3/8" NPT Coupler 10,000 psi	1	CR400
5	Cylinder End Cap	1	DM0877020
6	NS1927 Cutting Tip	1	▲
7	Alignment Screw	1	
8	M4x6mm Grub Screw	1	
9	3.0 mm Hex Key (not shown)	1	
10	2.0 mm Hex Key (not shown)	1	
11	O-Ring	1	◆
12	Back-Up Ring	1	
13	WMU Plain Bushing	1	
14	Piston Bearing Strip	1	
15	Compression Spring	1	
16	Cylinder Vent Plug	1	
17	Piston Lip Seal	1	
18	M24 Flat Washer	1	
19	M20 Flat Washer	1	
20	Spiral Retaining Ring	2	DM1364049
21	Anchor Point	1	DM0578558
22	Handle	1	DM0575070
23	Handle Sticker	1	DM0876026
24	Lanyard	1	DM0899217
▲ NSH1927 Cutting Tip Service Kit NSH1927CTK		◆ NSH1927 Seal Kit NSH1927SK	
✱ Not supplied separately			

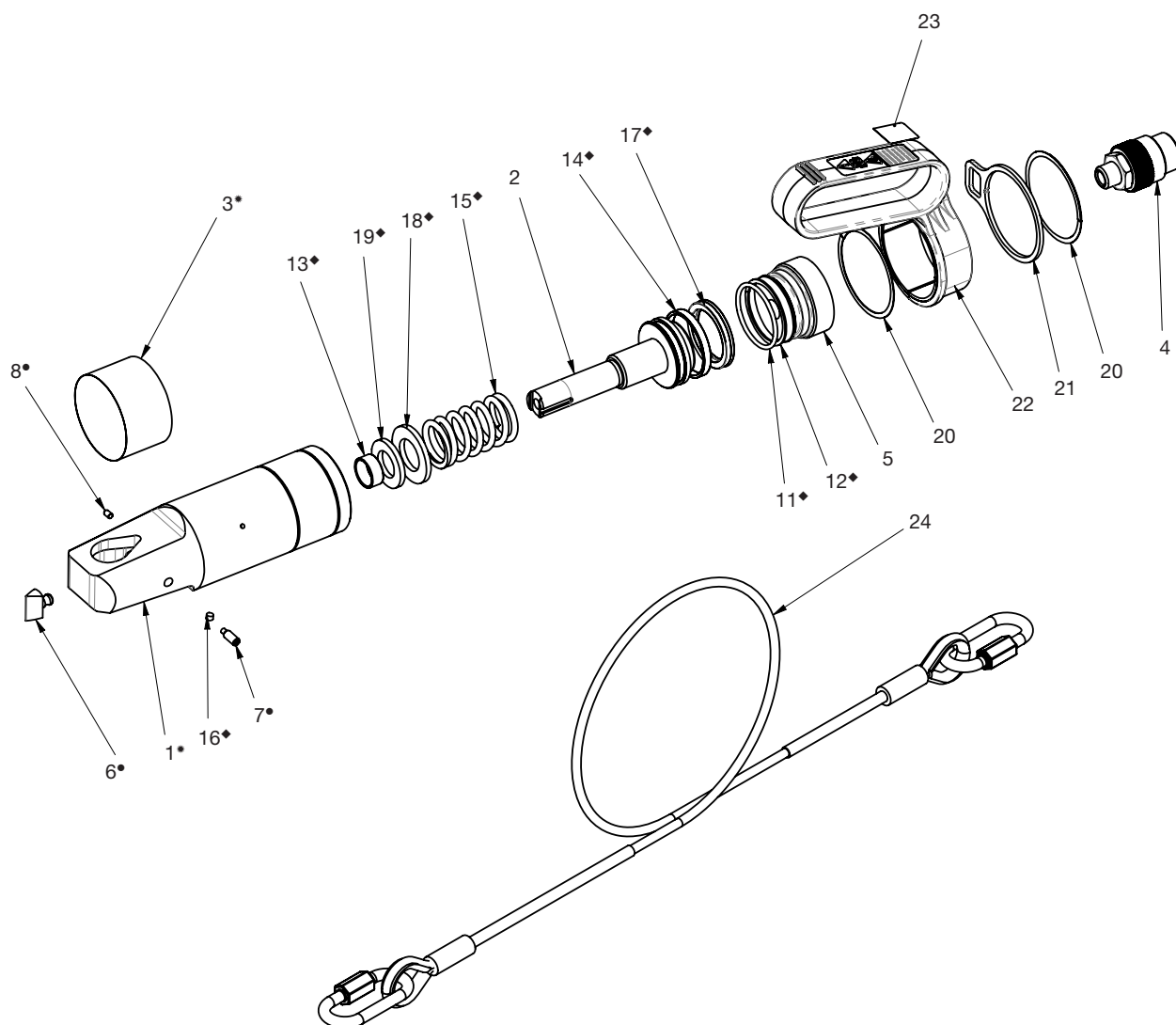
8.9 NSH2432 Hydraulic Head Exploded Views

Note:

Items marked * are not supplied separately.

Items marked ● supplied in NSH2432 Cutting Tip Service Kit NSH2432CTK.

Items marked ◆ supplied in NSH2432 Seal Kit NSH1927SK.



8.10 NSH2432 Hydraulic Head Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Head	1	✱
2	NSH1927/ NSH2432 Piston	1	DM0875051
3	NSH2432 Body Sticker Wrap	1	✱
4	3/8" NPT Coupler 10,000 psi	1	CR400
5	Cylinder End Cap	1	DM0877020
6	NS2432 Cutting Tip	1	●
7	Alignment Screw	1	
8	M4x6mm Grub Screw	1	
9	3.0 mm Hex Key (not shown)	1	
10	2.0 mm Hex Key (not shown)	1	
11	O-Ring	1	◆
12	Back-Up Ring	1	
13	WMU Plain Bushing	1	
14	Bearing Strip	1	
15	Compression Spring	1	
16	Cylinder Vent Plug	1	
17	Piston Lip Seal	1	
18	M24 Flat Washer	1	
19	M20 Flat Washer	1	
20	Spiral Retaining Ring	2	DM1364049
21	Anchor Point	1	DM0578558
22	Handle	1	DM0575070
23	Handle Sticker	1	DM0876026
24	Lanyard	1	DM0899217
● NSH2432 Cutting Tip Service Kit NSH2432CTK		◆ NSH2432 Seal Kit NSH1927SK	
✱ Not supplied separately			

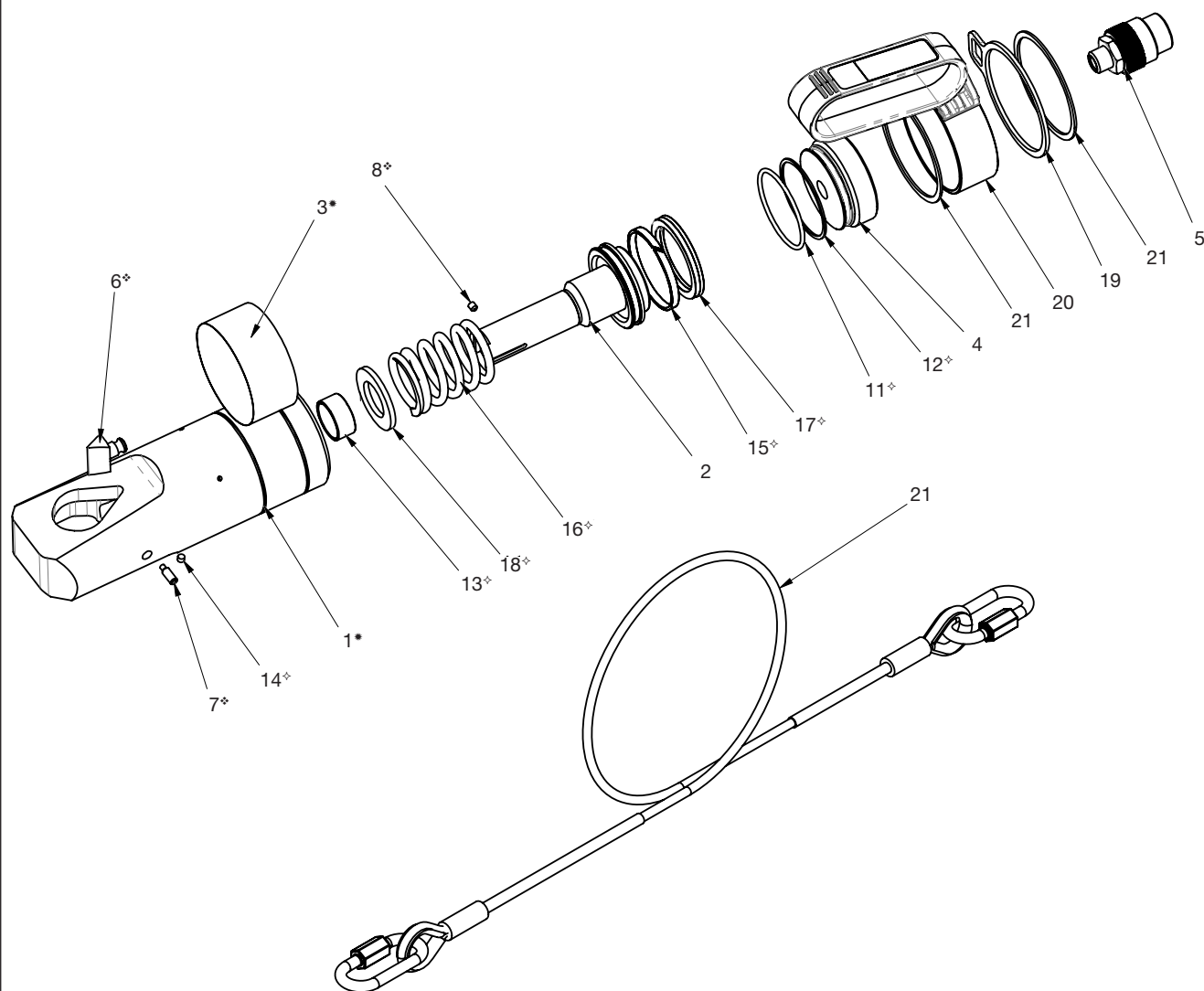
8.11 NSH3646 Hydraulic Head Exploded Views

Note:

Items marked * are not supplied separately.

Items marked ♦ supplied in NSH3646 Cutting Tip Service Kit NSH3646CTK.

Items marked ◇ supplied in NSH3646 Seal Kit NSH3646SK.



8.12 NSH3646 Hydraulic Head Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Head	1	✱
2	NSH3646 Piston	1	DM0889051
3	NSH3646 Body Sticker Wrap	1	✱
4	Cylinder End Cap	1	DM0890020
5	3/8" NPT Coupler 10,000 psi	1	CR400
6	NSH3646 Cutting Tip	1	❖
7	Alignment Screw	1	
8	M5 Socket Set Screw	1	
9	3.0 mm Hex Key (not shown)	1	
10	2.5 mm Hex Key (not shown)	1	
11	O-Ring	1	✧
12	Back-Up Ring	1	
13	WMU Plain Bushing	1	
14	Cylinder Vent Plug	1	
15	Piston Bearing Strip	1	
16	Compression Spring	1	
17	Piston Lip Seal	1	
18	Flat Washer	1	
19	Anchor Point	1	DM0891558
20	Modular Handle Assembly	1	DM0894070
21	Spiral Ring	2	DM1364049
22	Lanyard	1	DM0899217
❖ NSH3646 Cutting Tip Service Kit NSH3646CTK		✧ NSH3646 Seal Kit NSH3646SK	
✱ Not supplied separately			

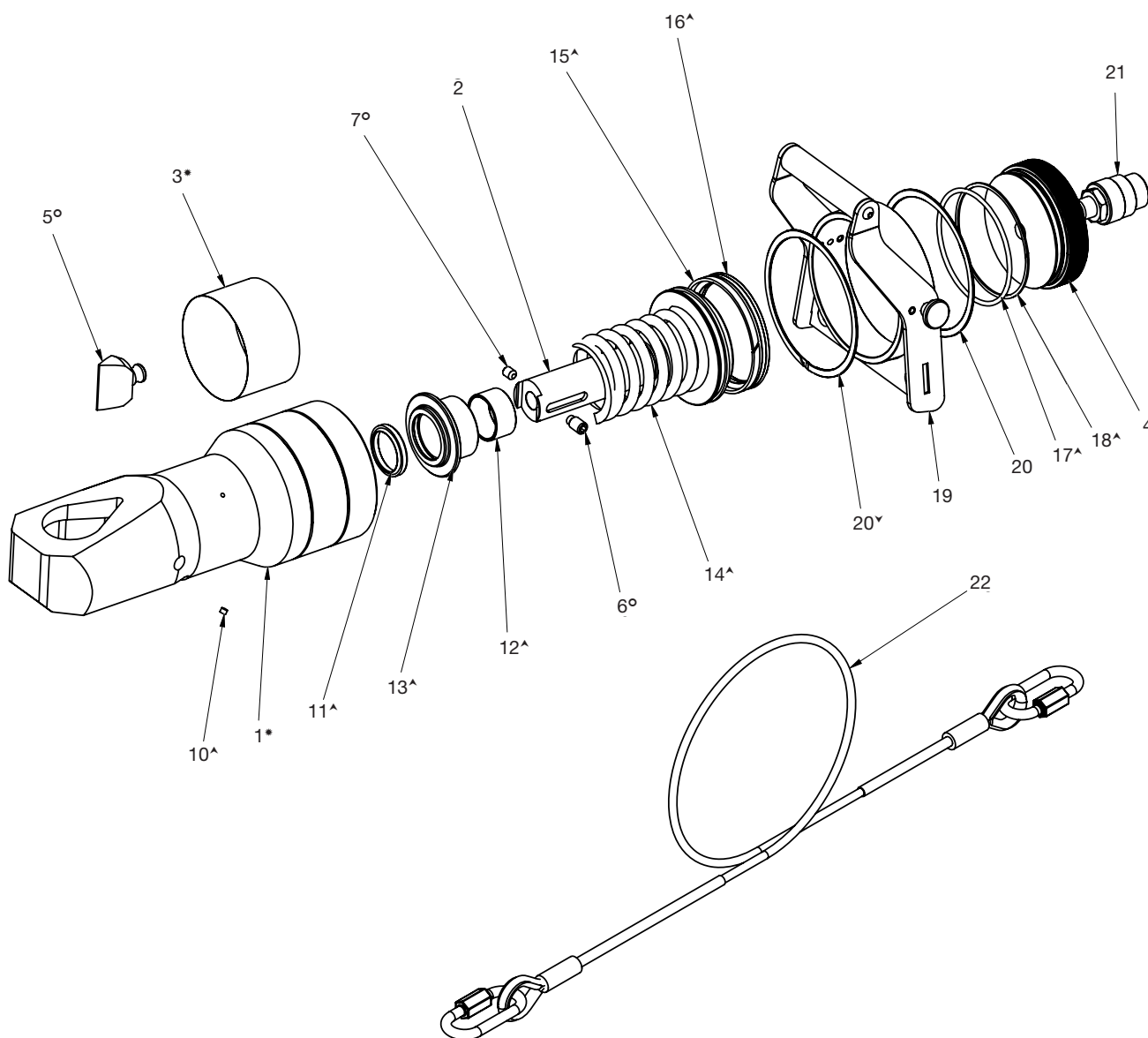
8.13 NSH5065 Hydraulic Head Exploded Views

Note:

Items marked * are not supplied separately.

Items marked ○ supplied in NSH5065 Cutting Tip Service Kit NSH5065CTK.

Items marked ▲ supplied in NSH5065 Seal Kit NSH5065SK.



8.14 NSH5065 Hydraulic Head Table of Parts

Item	Description	Qty	Part Numbers	
1	Cutting Head	1	✱	
2	NSH5065 Piston	1	DM0903051	
3	NSH5065 Body Sticker Wrap	1	✱	
4	Cylinder End Cap	1	DM0904020	
5	NSH5065 Cutting Tip	1	○	
6	Alignment Screw	1		
7	M8x10mm Grub Screw	1		
8	4.0 mm Hex Key (not shown)	1		
9	5 mm Allen Key (not shown)	1		
10	Cylinder Vent Plug	1		▲
11	Wiper Seal	1		
12	WMU Plain Bushing	1		
13	Bearing + Wiper Cartridge	1		
14	Compression Spring	1		
15	Piston Bearing Ring	1		
16	Piston Lip Seal	1		
17	End Cap O-Ring	1		
18	Back-up Ring	1		
19	Handle Assembly	1	DM0906900	
20	Spiral Retaining Ring	2	DM1366049	
21	3/8" NPT Coupler 10,000 psi	1	CR400	
22	Lanyard	1	DM0899217	
○ NSH5065 Cutting Tip Service Kit NSH5065CTK		▲ NSH5065 Seal Kit NSH5065SK		
✱ Not supplied separately				

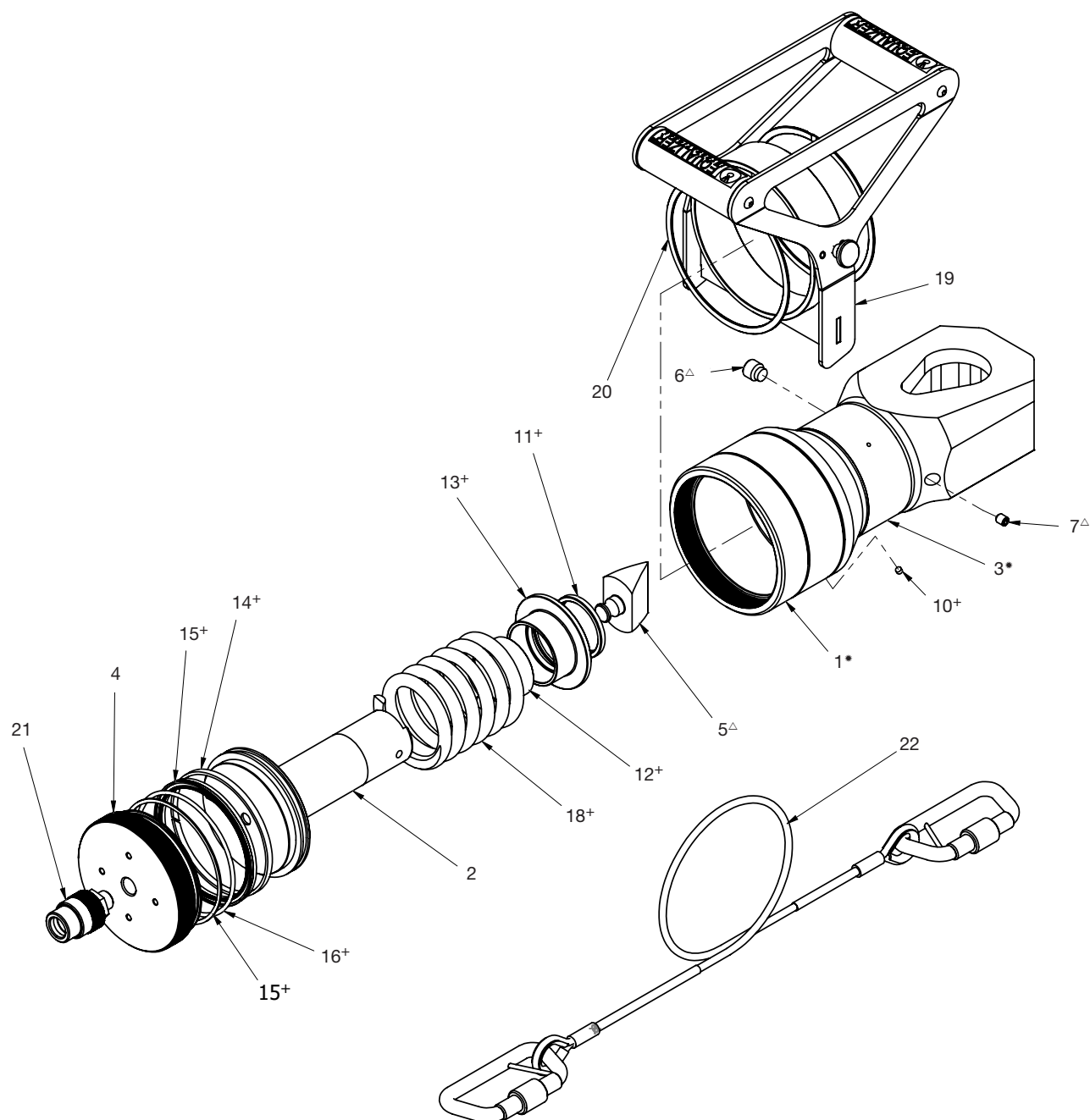
8.15 NSH6575 Hydraulic Head Exploded Views

Note:

Items marked * are not supplied separately.

Items marked Δ supplied in NSH6575 Cutting Tip Service Kit NSH6575CTK.

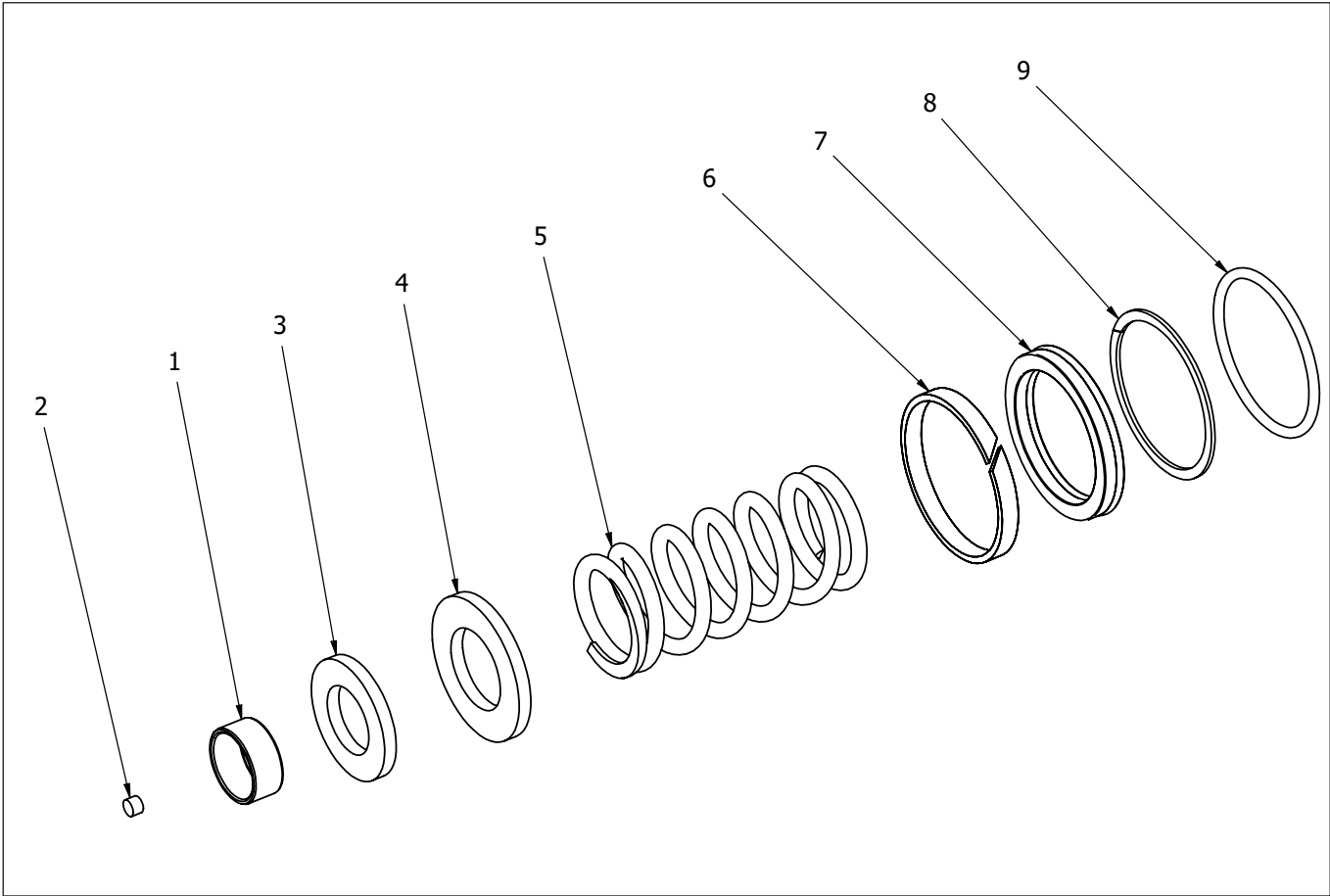
Items marked + supplied in NSH6575 Seal Kit NSH6575SK.



8.16 NSH6575 Hydraulic Head Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Head	1	✱
2	NSH6575 Piston	1	DM0919051
3	NSH6575 Body Sticker Wrap	1	✱
4	Cylinder End Cap	1	DM0920020
5	NSH6575 Cutting Tip	1	△
6	Alignment Screw	1	
7	M8x10mm Grub Screw	1	
9	M4 Hex Key (not shown)	1	
10	NS50 8mm Allen Key (not shown)	1	
10	Cylinder Vent Plug	1	+
11	Wiper Seal	1	
12	Bushing	1	
13	Bearing + Wiper Cartridge	1	
14	Piston Bearing Ring	1	
15	Piston Lip Seal	1	
16	O-Ring	1	
17	Back-up Ring	1	
18	Compression Spring	1	
19	Handle Assembly	1	DM0924900
20	Spiral Ring	2	DM1367049
21	Coupler	1	CR400
22	Lanyard	1	DM0899217
△ NSH6575 Cutting Tip Service Kit NSH6575CTK		+ NSH5065 Seal Kit NSH6575SK	
✱ Not supplied separately			

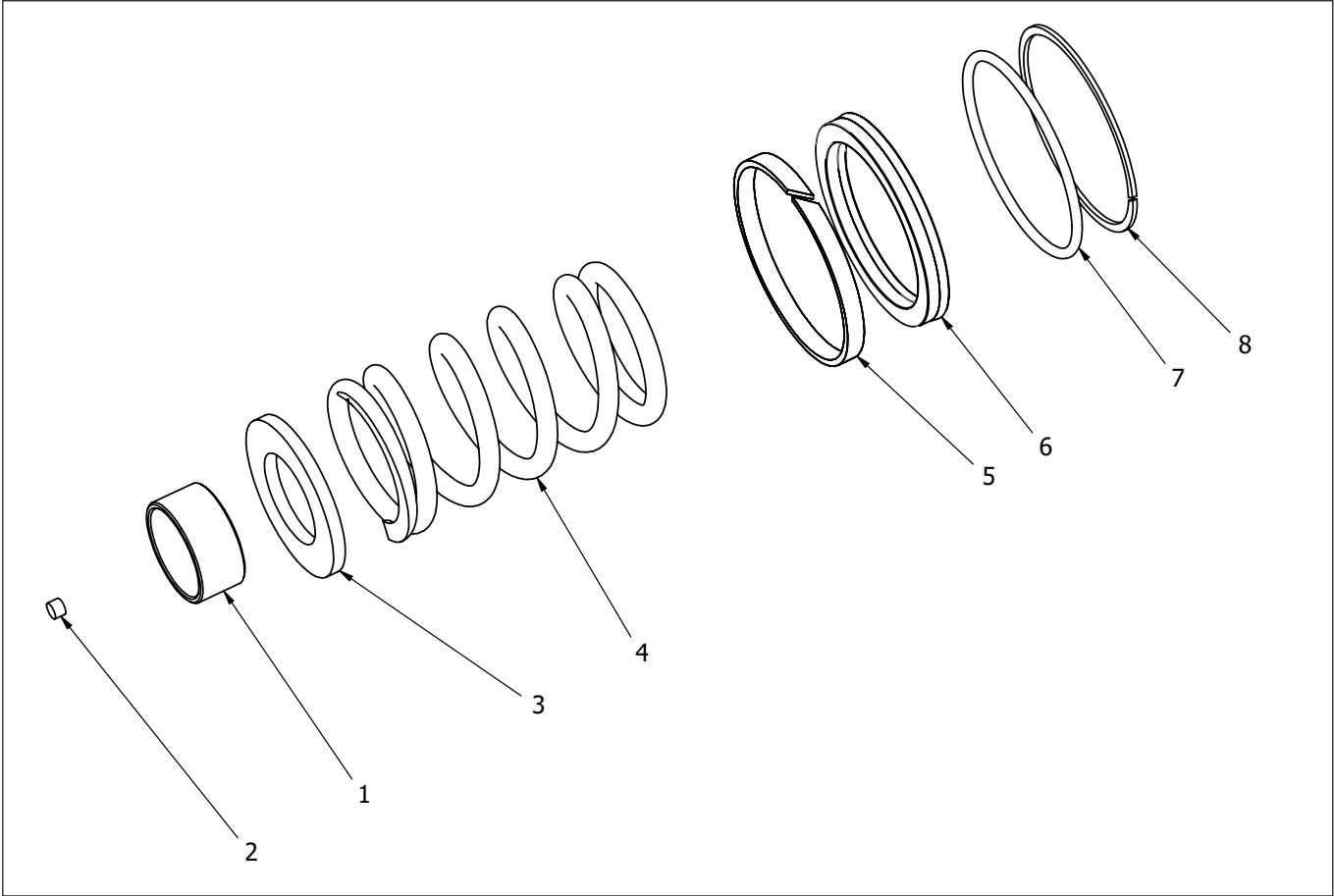
8.17 NSC1927/ NSC2432/ NSH1927/ NSH2432 Seal Kit Exploded Views



8.18 NSC1927/ NSC2432/ NSH1927/ NSH2432 Seal Kit Table of Parts

Item	Description	Qty	Part Numbers
1	WMU Plain Bushing	1	NSH1927SK
2	Cylinder Vent Plug	1	
3	M20 Flat Washer	1	
4	M24 Flat Washer	1	
5	Compression Spring	1	
6	Bearing Strip	1	
7	Piston Lip Seal	1	
8	Back-Up Ring	1	
9	O-Ring	1	

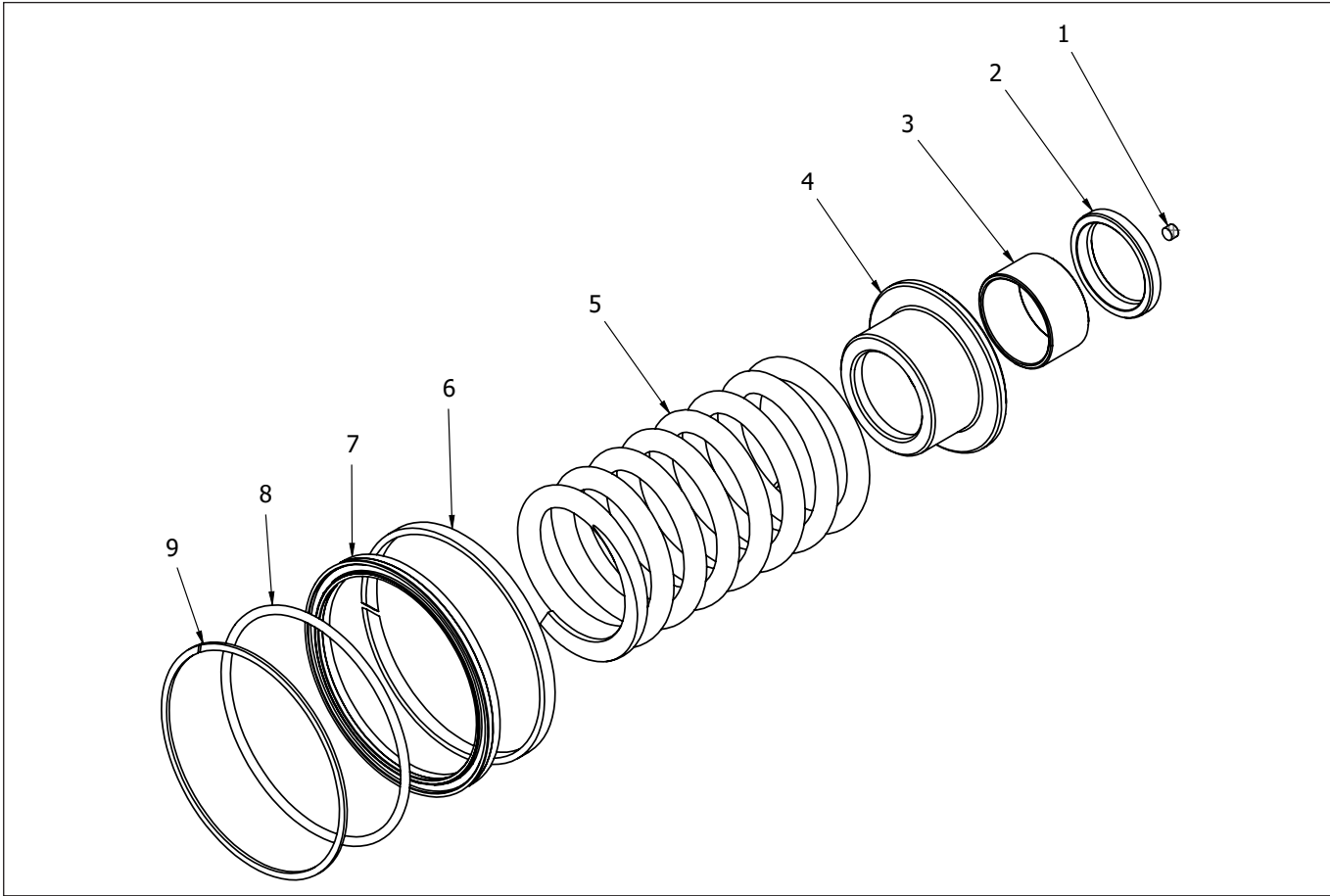
8.19 NSH3646 Seal Kit Exploded Views



8.20 NSH3646 Seal Kit Table of Parts

Item	Description	Qty	Part Numbers
1	WMU Plain Bushing	1	NSH3646SK
2	Cylinder Vent Plug	1	
3	M27 Flat Washer	1	
4	Compression Spring	1	
5	Bearing Strip	1	
6	Piston Lip Seal	1	
7	O-Ring	1	
8	Back-Up Ring	1	

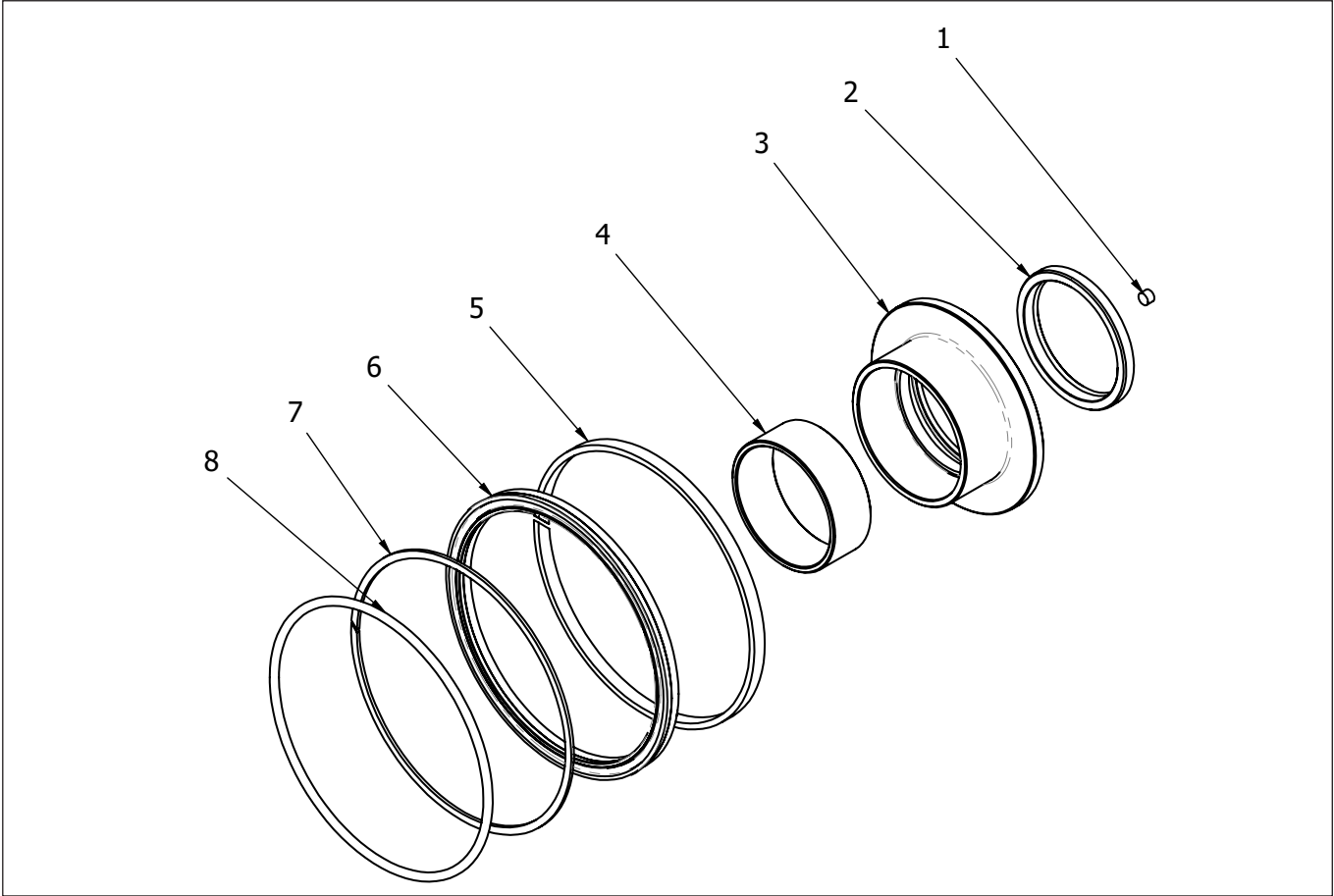
8.21 NSH5065 Seal Kit Exploded Views



8.22 NSH5065 Seal Kit Table of Parts

Item	Description	Qty	Part Numbers
1	Cylinder Vent Plug	1	NSH5065SK
2	Wiper Seal	1	
3	WMU Plain Bushing	1	
4	Bearing + Wiper Cartridge	1	
5	Compression Spring	1	
6	Piston Bearing Ring	1	
7	Piston Lip Seal	1	
8	End Cap O-Ring	1	
9	Back-Up Ring	1	

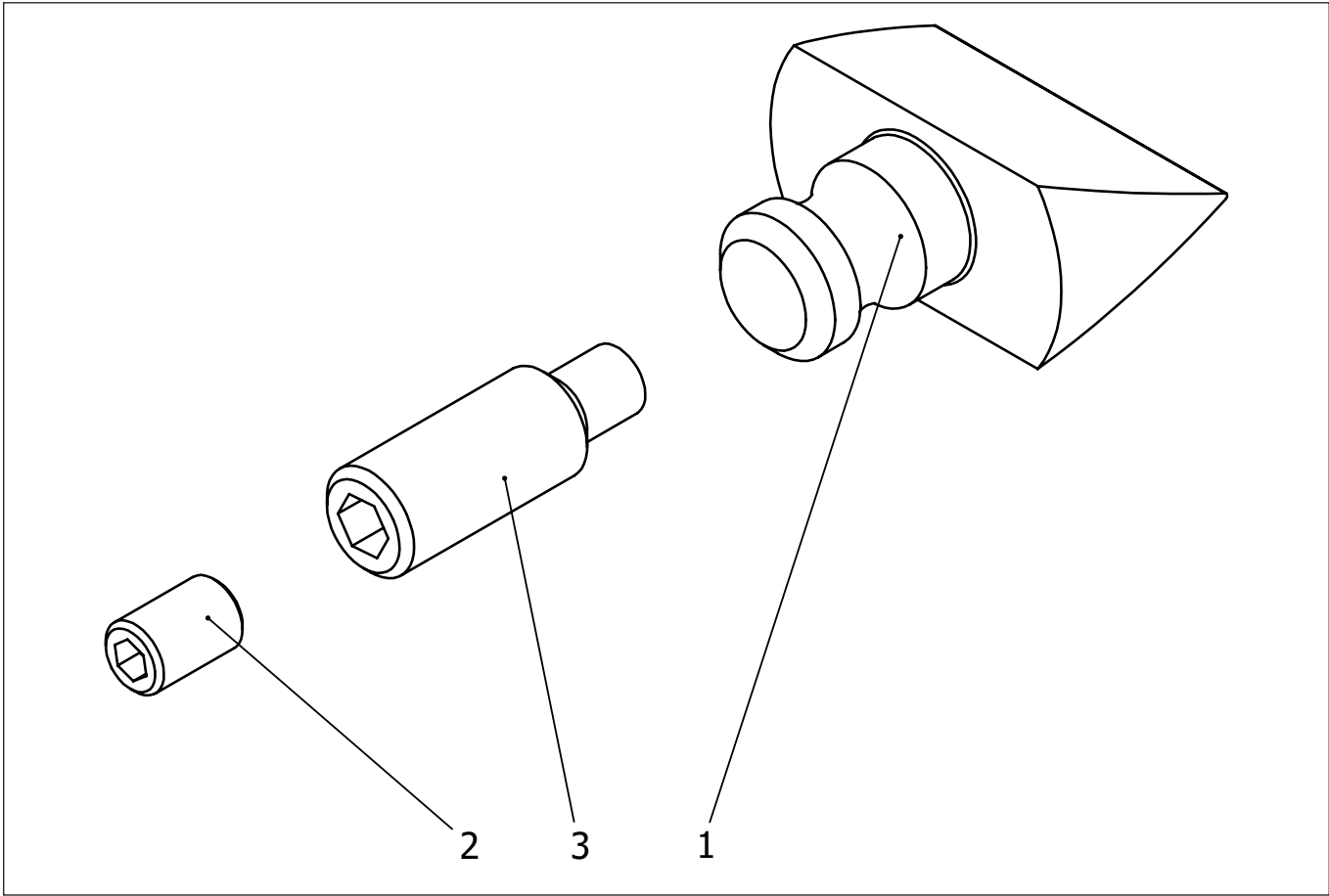
8.23 NSH6575 Seal Kit Exploded Views



8.24 NSH6575 Seal Kit Table of Parts

Item	Description	Qty	Part Numbers
1	Cylinder Vent Plug	1	NSH6575SK
2	Wiper Seal	1	
3	WMU Plain Bushing	1	
4	Bearing + Wiper Cartridge	1	
5	Compression Spring	1	
6	Piston Bearing Ring	1	
7	Piston Lip Seal	1	
8	End Cap O-Ring	1	
9	Back-Up Ring	1	

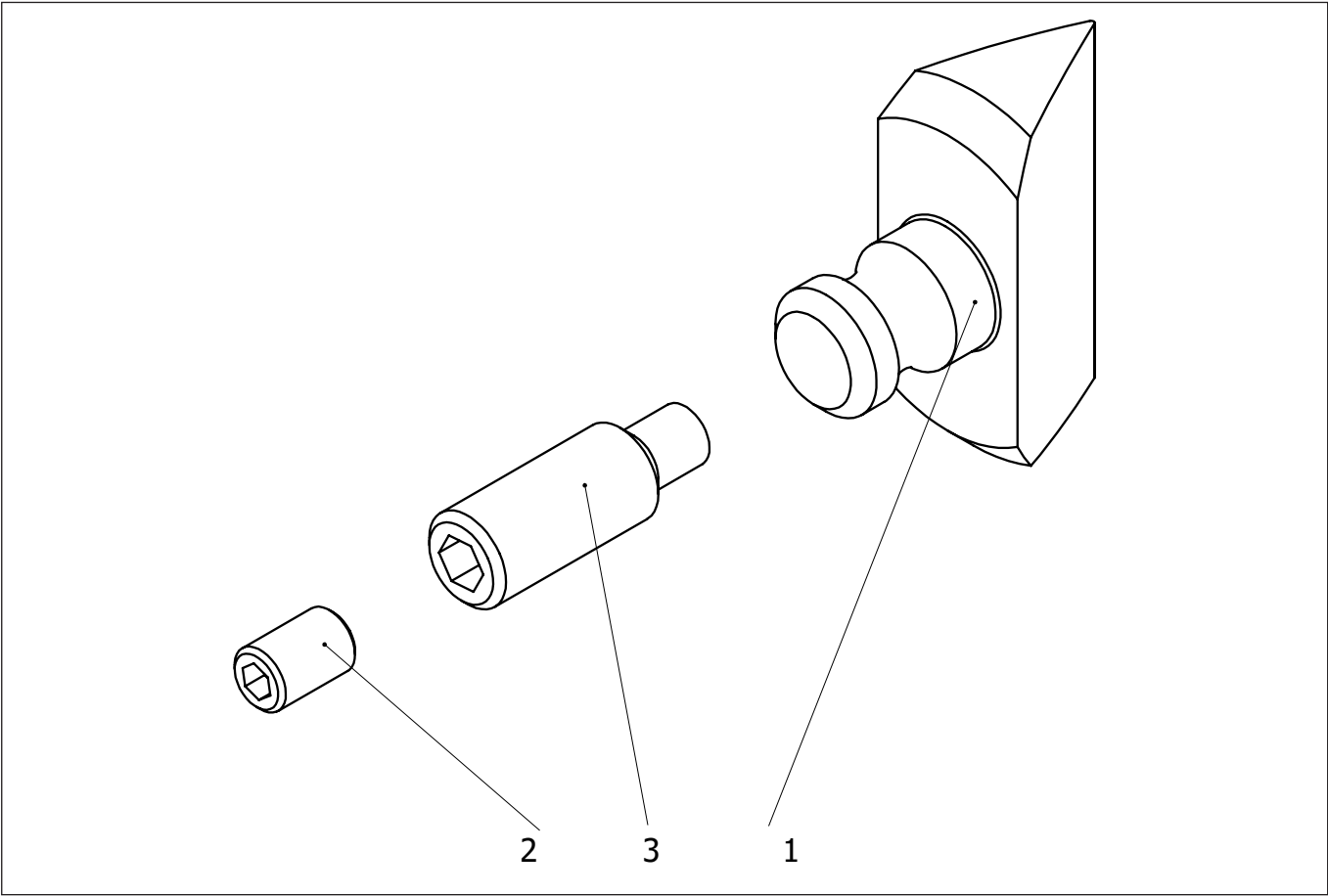
8.25 NSC1927/ NSH1927 Cutting Tip Service Kit Exploded Views



8.26 NSC1927/ NSH1927 Cutting Tip Service Kit Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Tip	1	NSH1927CTK
2	M4x6mm Grub Screw	1	
3	Alignment Screw	1	

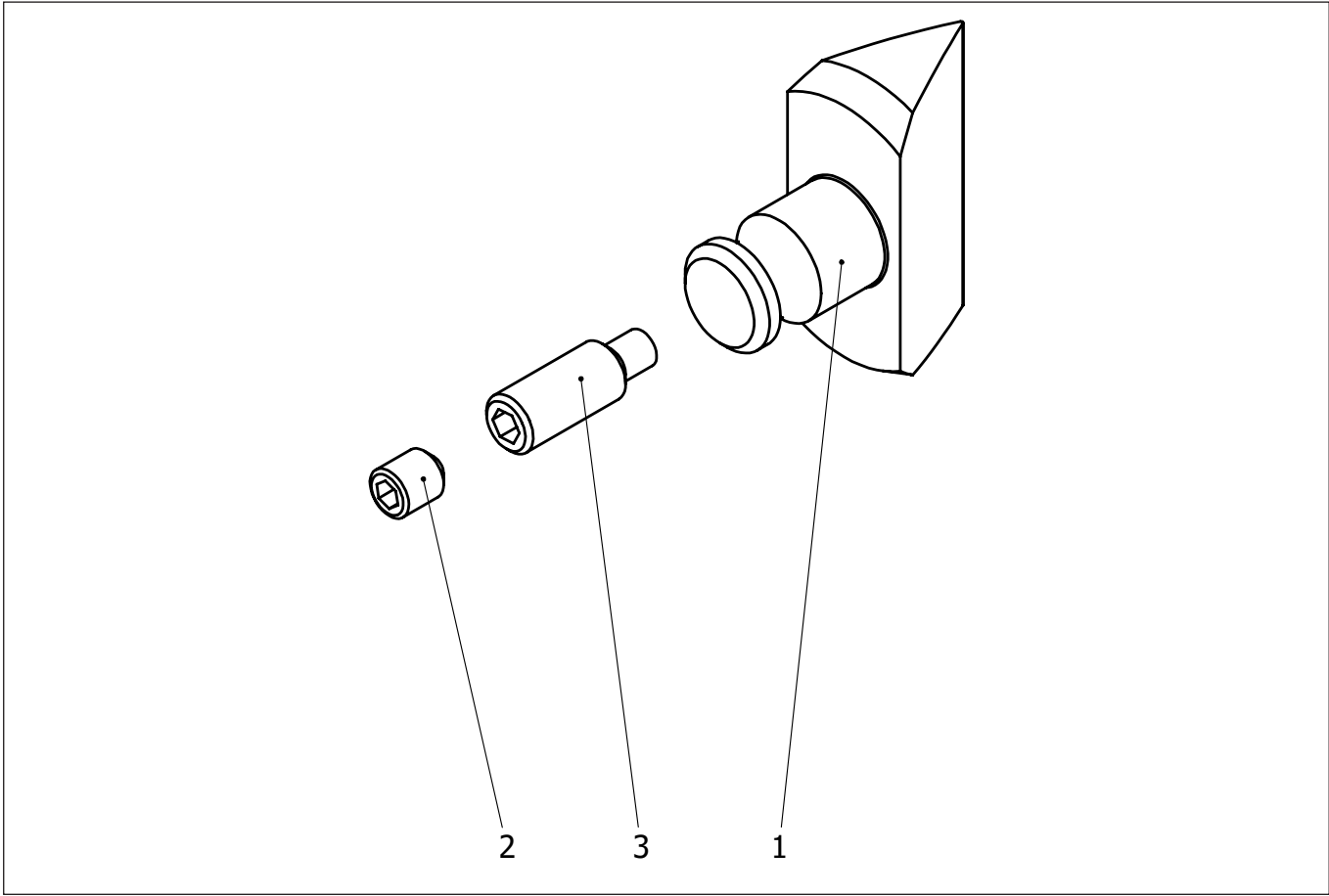
8.27 NSC2432/ NSH2432 Cutting Tip Service Kit Exploded Views



8.28 NSC2432/ NSH2432 Cutting Tip Service Kit Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Tip	1	NSH2432CTK
2	M4x6mm Grub Screw	1	
3	Alignment Screw	1	

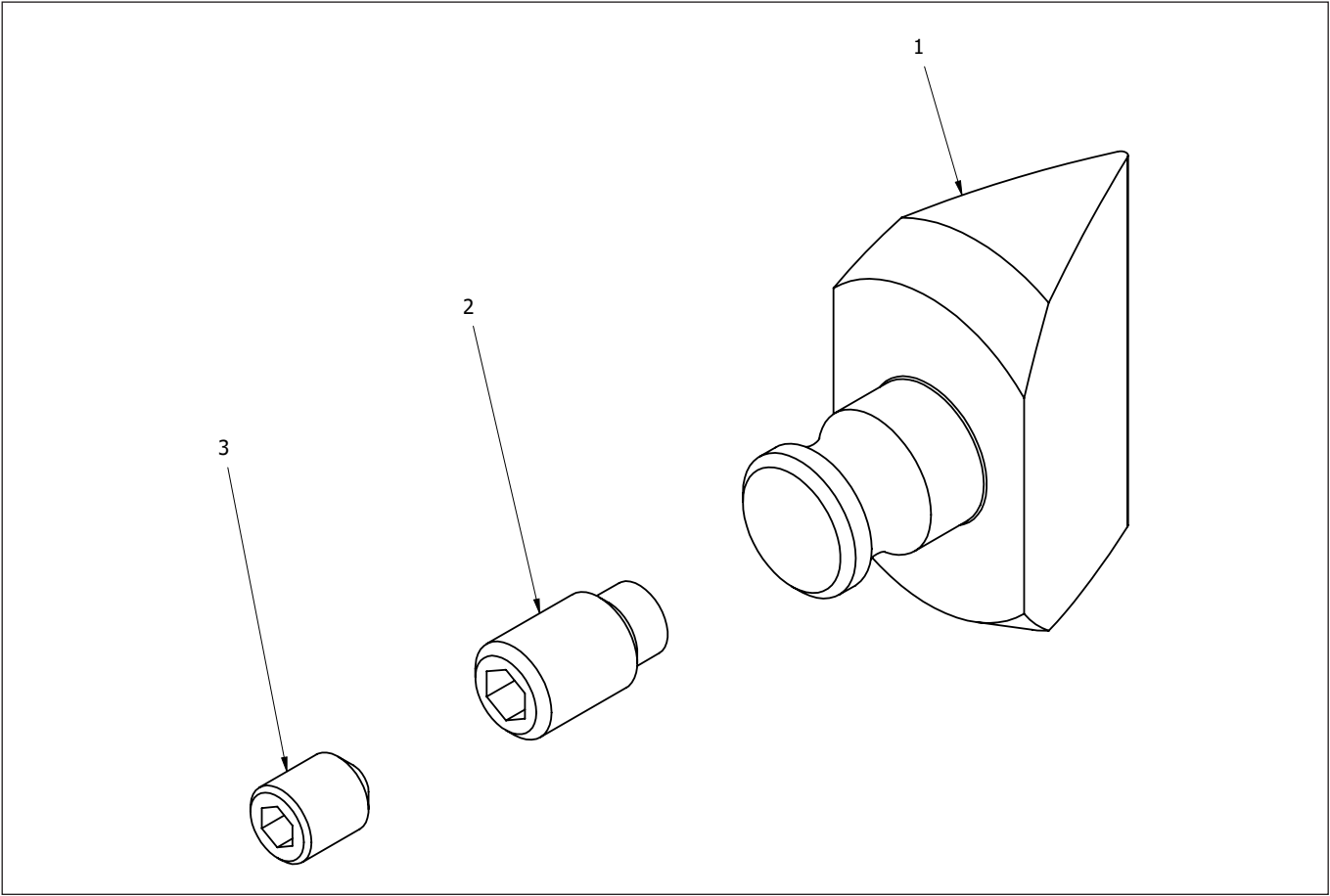
8.29 NSH3646 Cutting Tip Service Kit Exploded Views



8.30 NSH3646 Cutting Tip Service Kit Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Tip	1	NSH3646CTK
2	M5 Socket Set Screw	1	
3	Alignment Screw	1	

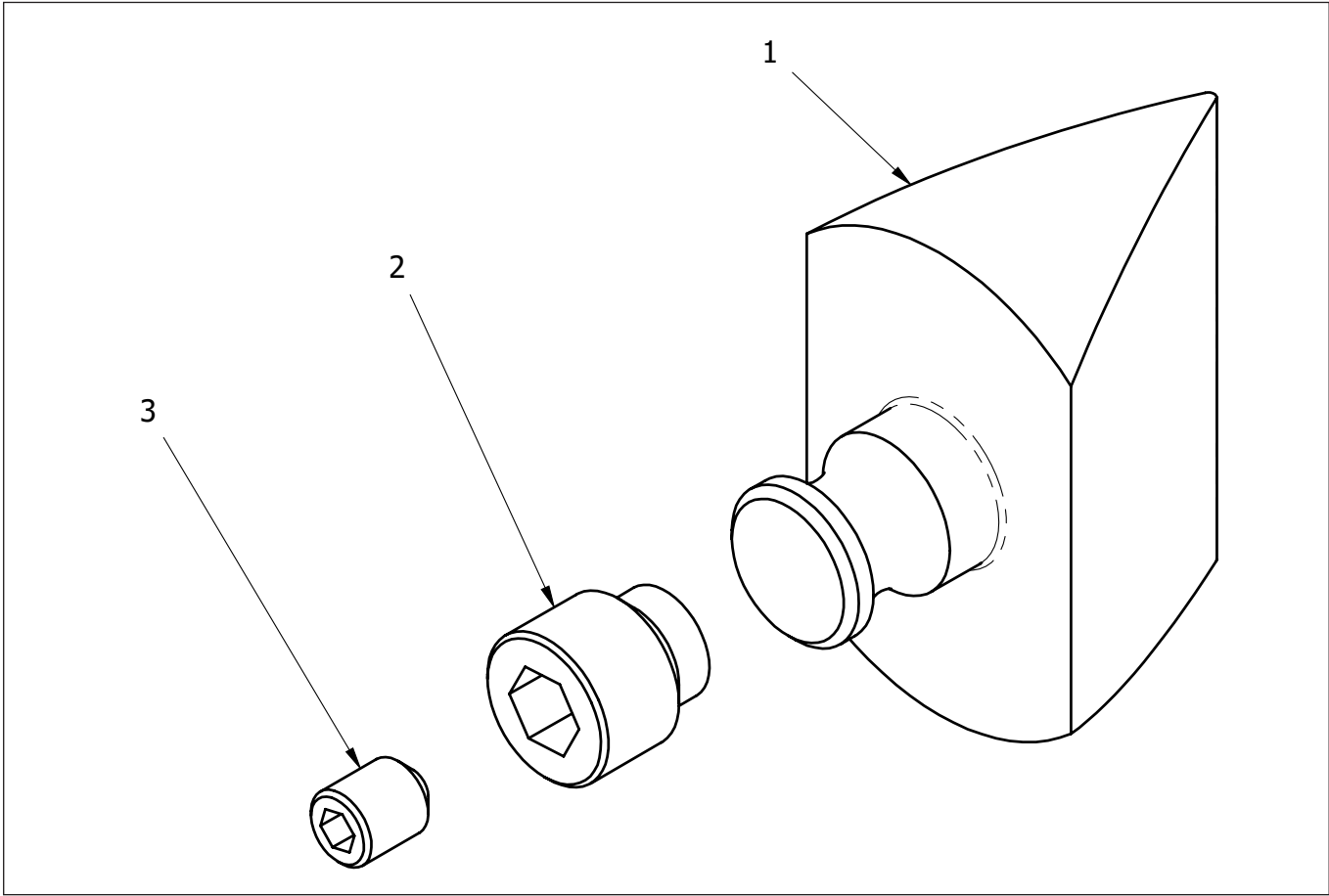
8.31 NSH5065 Cutting Tip Exploded Views



8.32 NSH5065 Cutting Tip Service Kit Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Tip	1	NSH5065CTK
2	Alignment Screw	1	
3	M8x10mm Grub Screw	1	

8.33 NSH6575 Cutting Tip Service Kit Exploded Views



8.34: NSH6575 Cutting Tip Service Kit Table of Parts

Item	Description	Qty	Part Numbers
1	Cutting Tip	1	NSH6575CTK
2	Alignment Screw	1	
3	M8x10mm Grub Screw	1	

9. Troubleshooting

9.1 NSH Troubleshooting

Fault	Possible Cause	Corrective Action
The piston advances but the tool does not split the nut	The Cutting Tip is damaged.	Remove pressure from the system then check for any damage to the Cutting Tip. If signs of damage are present replace the Cutting Tip. (See Section 7.3).
	The Cutting Tip is not aligned.	Remove pressure from the system then check that the alignment screw is located in the alignment slot on the piston. If necessary, replace the alignment screw. (See Section 7.3).
The piston is advancing but does not reach full pressure	The air-vent is obstructed by dirt or debris.	Carefully unblock the air-vent using a small blunt object.
The piston does not move	There is an air-lock within the hydraulic system	Select Retract (-) and prime pump to circulate oil around the system.
	Insufficient oil in the hydraulic system.	Refill with clean oil and bleed the hydraulic system.
	Retract (-) is selected.	Select Advance (+) and pump the handle.
	Air has accumulated around pump inlet when used upside down.	Bleed any air from the hydraulic reservoir. Inspect the tool for oil leaks on the reservoir, possibly indicative of a perished bladder. Refer to an approved Enerpac distributor for repair.
	The inlet check-valve or intermediate valve ball has become stuck.	Dismantle the check valve, free and clean the valve balls. Refer to an approved Enerpac distributor for repair.
The piston moves as intended but does not seem to be achieving full pressure	Intermediate valve not seating / relief valve leaking.	Check cleanliness of valve ball. Re-seat using a hammer and punch. Refer to an approved Enerpac distributor for further instruction.
Hydraulic pressure slowly diminishes and the pump handle does not rise	The release valve is leaking.	Refer to an approved Enerpac distributor for further instructions.
	The piston seal is leaking.	Inspect the tool for oil leaks, possibly indicative of a perished seal. Refer to an approved Enerpac distributor for further instructions.
Tool actuation feels soft and unresponsive	There is air in the hydraulic system.	Bleed the hydraulic system. Refer to an approved Enerpac distributor for further instruction.
The cutting tip does not last as well as expected	Using very hard nuts (such as 2H grade) will significantly shorten the life of a Cutting Tip.	Ensure grease is applied generously to the Cutting Tip before each cut. When cutting very hard nuts ensure an adequate stock of spare Cutting Tips are available.
The tool is not splitting the nut, even at full pressure	Sometimes multiple attempts are required to split larger or particularly high-grade (e.g. 2H) nuts.	Release the pressure and actuate the tool repeatedly until the nut is split.
		Check the Cutting Tip is sharp and that grease has been applied generously.

NOTICE **AIR-LOCK RELIEF** If full pressure is not achieved an air-lock may be present in the hydraulic system. Please refer to the pump instruction manual to relieve any air locks.

9.2 NSC Troubleshooting

Fault	Possible Cause	Corrective Action
The piston advances but the tool does not split the nut	The Cutting Tip is damaged.	Remove pressure from the system then check for any damage to the Cutting Tip. If signs of damage are present replace the Cutting Tip. (See Section 7.3).
	The Cutting Tip is not aligned.	Remove pressure from the system then check that the alignment screw is located in the alignment slot on the piston. If necessary, replace the alignment screw. (See Section 7.3).
The piston is advancing but does not reach full pressure	The air-vent is obstructed by dirt or debris.	Carefully unblock the air-vent using a small blunt object.
The Cutting Tip does not last as well as expected	Using very hard nuts (such as 2H grade) will significantly shorten the life of a Cutting Tip.	Ensure grease is applied generously to the Cutting Tip before each cut. When cutting very hard nuts ensure an adequate stock of spare Cutting Tips are available.
The tool does not splitting the nut, even at full pressure	Sometimes multiple attempts are required to split larger or particularly high-grade (e.g. 2H) nuts.	Release the pressure and actuate the tool repeatedly until the nut is split.
		Check the Cutting Tip is sharp and that grease has been applied generously.

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[illegible]

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[illegible]

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