KuDos®

Your Forever Working Partner

ORIGINAL INSTRUCTIONS

KuDos Industrial Inc. LLC

Safe Operation & Maintenance Instructions

Hydraulic Crimper Tools
UB-412

ATTENTION!

Original Safe Operation & Maintenance Instructions must be followed

KuDos Hydraulic Crimper Tools are carefully inspected for quality and tested for safety. We meet ISO 9001:2015, ISO 14001:2015, IECQ QC 080001, OHSAS 18001:2007 & UVDB.

ISO 9001:2015 | ISO 14001:2015 | IECQ QC 080001 | OHSAS 18001:2007 | UVDB Registered

Safety Warnings

Carefully read ALL warnings before operating this tool:

⚠ WARNING:	
	DO NOT attempt to disassemble or repair this product. Doing so will violate the terms of the warranty.
	DO NOT use this tool on glass, plastic, wood or any other materials which could shatter. Do not exceed equipment ratings.
	Always wear safety goggles when operating this product. Projectiles or hydraulic fluid under pressure can cause serious injuries.
	This product is NOT an insulator. Use protective equipment when working near power lines.
⚠ ATTENTION!!	
	Read all instructions and warnings carefully. Follow all safety precautions to avoid injury or damage to property.
	Only crimp terminals and sleeves that fit the tool specifications. DO NOT attempt to crimp oversized fittings

Table of Contents

Thank you for using KuDos® products. This manual must be read carefully prior to operating this product. Special attention should be paid to the section 'Safety Instructions'.

Damages and injuries caused by improper use of this product are NOT included in our warranty. We would like to remind you to work safely and to keep this manual on hand.

Safety Instructions

Follow ALL instructions to ensure safety:

Work Area Safety

1. Keep the area around the equipment clean and free of obstructions

2. Bystanders should stay clear of the work area to ensure safety

Personal Safety

1. Stay alert while using this hydraulic equipment to prevent serious injury. Do not use under the influence of drugs, alcohol or medicine.

2. Do not wear loose hair or clothes that may get caught while the equipment is in operation.

3. To reduce the risk of injury, wear nonconductive gloves and nonskid safety-shoes. Always wear protective eyewear.

4. Work safely. Maintain your balance and do not reach while operating hydraulic tools.

Tool Use and Care

1. Do not use this tool if there are any abnormalities or damage to any of its components.

2. Keep out of the reach of children. All users should be familiar with its use before operating.

3. Inspect the tool before and after every use. Do not use this tool if it is damaged in any way.

4. Personal injury can be caused by operating damaged or poorly maintained tools. Check for loose parts before use.

5. Use only Kudos recommended accessories with this tool.

6. Do not use this tool in wet conditions. Store this tool in a dry place.

Service

1. This tool must be repaired by qualified technicians. Do not attempt to disassemble or repair this tool yourself.

2. When having the tool serviced, always use identical Kudos replacement parts.

Product Description

SPECIFICATIONS:

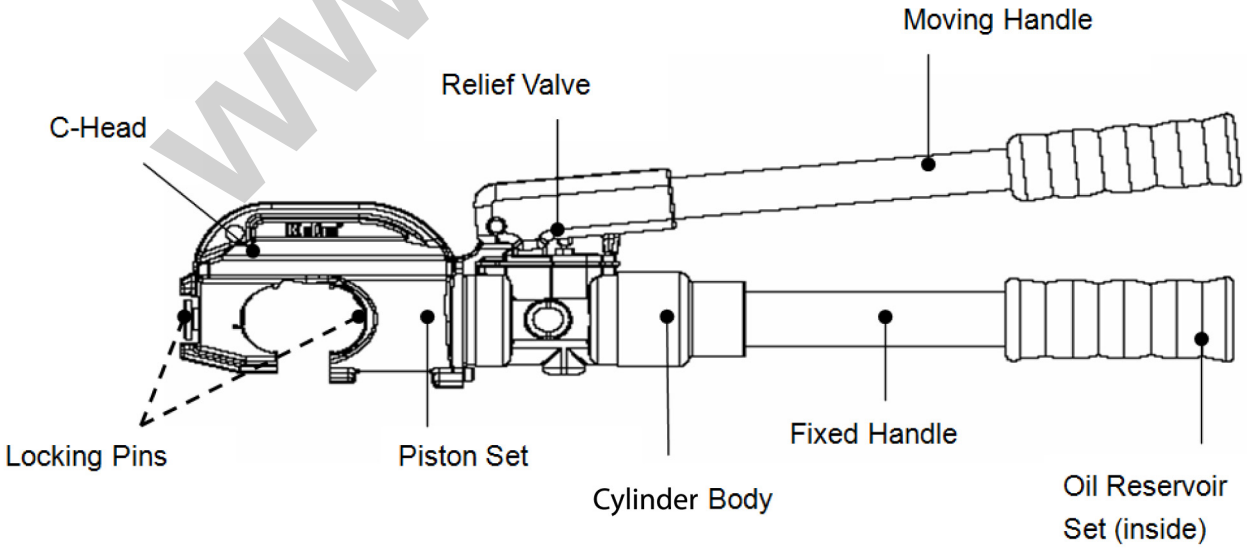
- Dimensions: 590 × 150 × 70mm
- Weight: 6.5 kgs
- Oil required: 147cc(cm^3)
- Max. pressure: 700 bar(10,000psi)
- Max. output: 11.6 tons (114 kN)
- C-head opening: 40mm

CAPACITY:

- Max. compression: 32mm copper lugs
- Accepts all dies used by Alcoa, Burndy, T&B, Klauke, Cembre and Blackburn 12-ton compressors
- Die sizes available: CU 16/25/35/50/70/95/120/150/185/240/300/400

FEATURES:

- 180° rotating tool head
- Adjustable pressure relief valve for overload protection
- Two-stage system with automatic low/high-pressure conversion for rapid/slow advance
- Durable, lightweight fiberglass handles
- Accessories: KuDos plastic tool case
- Die sets not included

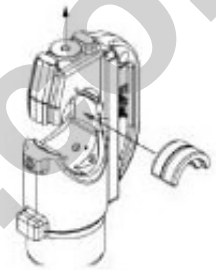


Operating Instructions

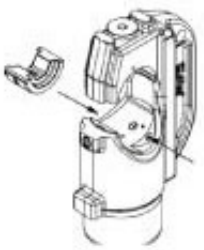
BEFORE USE, DON'T FORGET TO…..
- Make sure all parts of the product are clean and rustless, and that no loose parts exist.
- Check that no leakage occurs while the tool is resting or while the product is tested without cables.

1. To start, rotate the moving handle clockwise and bring the tool handles together.This willdepress the release valve stem to fully retract the piston.

2. Place the upper die by pulling up the spring pin and pushing the die into the opening of the die seat along the groove.

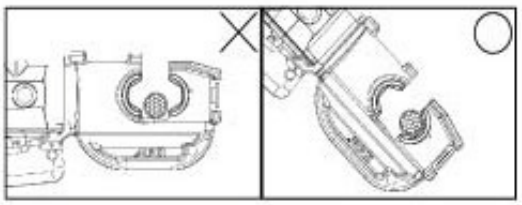


3. To place the lower die, push down the die release button on the piston and slide the die onto the die seat along its groove.



4. Position the cable and fitting into the C-head opening. Pump the moving handle back and forth to advance the piston.

5. Press the cable and fitting into the center of the upper die as the piston advances. Off-centered crimping may damage or deform the tool head.



6. The rapid motion of the piston with low hydraulic pressure will convert to a slow motion with high pressure once the upper and lower dies press together.

7. The operation will be complete when the hydraulic pressure reaches 700 bar and the relief valve activates. There is an audible click as the pressure is relieved.

8. Turn the moving handle clockwise and press the handles together to return the piston to start position.

9. Follow connector specifications to apply the right number of crimps. See the diagrams on page 9 for the crimping sequence.

AFTER USE, DON'T FORGET TO...

- Clean the product and check to ensure that all pieces are in working condition.
- Apply rust preventive oil to the product and blades before returning it to the carrying case.

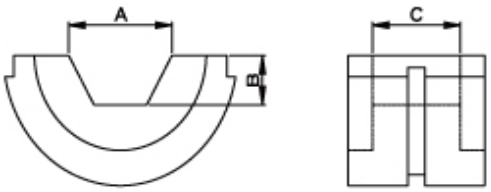
****IMPORTANT****

Under any operation, the piston **MUST BE FULLY RETRACTED to keep the tool in good condition.

Do not test the crimper **without dies to avoid damage C-Head

Die Sets

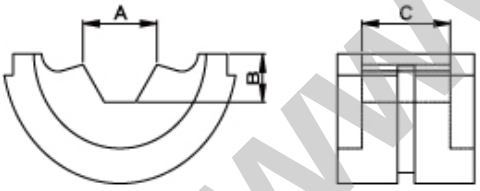
1) Hex Dies For Copper Lugs



Unit: mm

Die No.	A	B	C
CU-16	7.20	3.12	14.00
CU-25	8.43	3.67	14.00
CU-35	10.00	4.33	16.00
CU-50	11.60	5.02	16.00
CU-70	13.70	5.95	15.60
CU-95	15.90	6.85	15.70
CU-120	17.98	7.79	16.00
CU-150	20.10	8.70	15.00
CU-185	22.33	9.67	14.00
CU-240	25.43	11.01	13.00
CU-300	28.44	12.32	11.20
CU-400	30.00	14.55	11.50

2) Hex Dies for Solderless Terminals



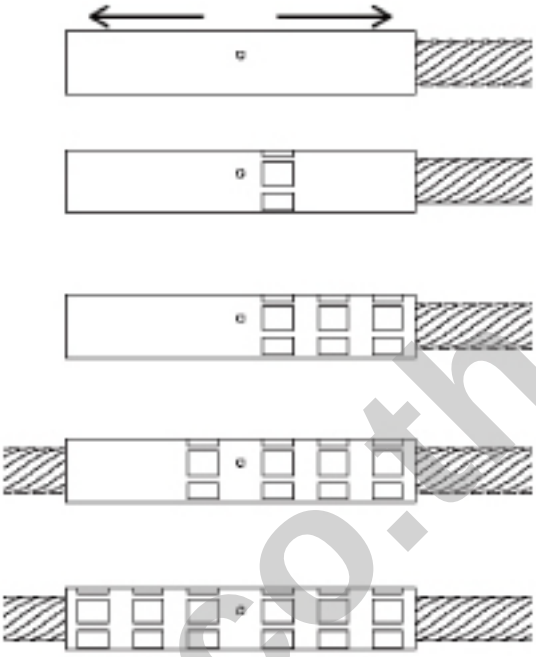
Unit: mm

Die No.	A	B	C
CU-8-14	7.40	3.50	8.00
CU-22	8.80	4.30	10.00
CU-38	11.50	5.40	11.50
CU-60-70	13.40	6.00	15.00
CU-80	15.00	6.75	18.00
CU-100	18.00	8.00	15.00
CU-150-180	21.00	9.10	13.00
CU-200	28.44	12.32	11.20
CU-325	30.00	14.56	11.50

Compression Diagrams

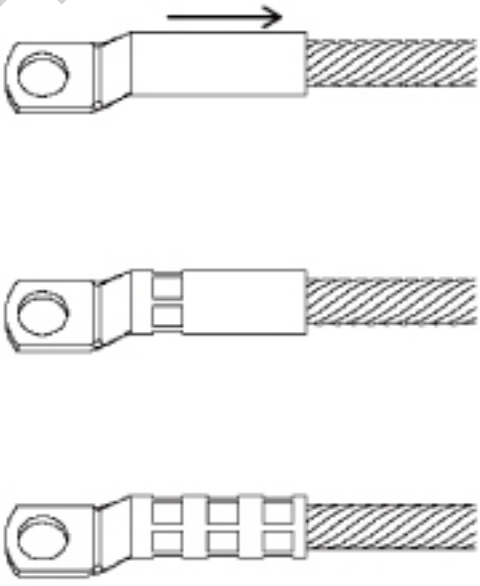
1)SLEEVE FITTINGS

Direction of Compression:
Single-sided/Outward



2)TERMINAL FITTINGS

Direction of Compression:
Outward



Hydraulic Fluid Maintenance

Restore piston action by following the steps below:

1)REMOVING AIR FROM SYSTEM:

1.Position the tool upside-down in a vice with the pump handle in the open position.

2.Unscrew the main handle from the body,then remove the reservoir bung/ cap.

3.Pump the moving handle a few times to advance the ram.

4.Press the release lever to release the pressure in the hydraulic circuit until the ram is fully retracted and the oil has returned completely into the reservoir.

5.Repeat the process several times to assure that all air bubbles are ejected.

6.Close the rubber reservoir and insert the filler cap,then reassenble the

2)REFILLING THE OIL RESERVOIR:

1.Check the oil reservoir every six months and make sure the reservoir is full.

2. To refill the oil reservoir, follow the steps above to disassemble the tool.

3.Do not use restored, used oil, or mix different kinds of oil.

ATTENTION:

- Use only new SHELL T15/T32 hydraulic fluid or equivalent.
- The hydraulic fluid must be changed every 24 months.
- Using the incorrect type of oil will damage the seals in the pump and cause the pump to malfunction.

Maintenance

Follow these tips to ensure long product life:

- Hydraulic fluid must be replaced every 24 months.
- Keep the tool head free of dirt and metal chips. Use a lubricant to clean the tool when necessary.
- Routine application of rust preventive oil to the product is needed. Avoid bringing the tool into contact with water or solvents.
- DO NOT let the tool drop to the ground or into the carry-ing case to avoid damage to internal parts or to the plastic case.

- DO NOT keep this product in places with high temperatures, high humidity, or direct sunlight.

- Suggested working temperatures are -10°C to 40°C. Checkhydraulic fluid specifications.

- Hydraulic fluid temperatures over 65°C might soften seals and cause fluid leaks.

- DO NOT DISASSEMBLE OR ATTEMPT TO REPAIR THIS TOOL.

ATTENTION:

•Use only new SHELL T15/T32 hydraulic fluid or equivalent.

•The hydraulic fluid must be changed every 24 months.

•Using the incorrect type of oil will damage the seals in the pump and cause the pump to malfunction.

Troubleshooting

The fitting can not be crimped:

- 1. One or more tool parts require repair. Replace the parts immediately to prevent serious personal injury or property damage.
- 2. Applied fitting is over-specification.
- 3. Insufficient hydraulic fluid. Follow steps on page 10 to add fluid.
- 4. The cylinder piston might be deformed after crimping an off-center fitting, or from the tool being used in a manner for which it was not intended.

Handle is stuck or can't release the pressure:

- 1. Clean the moving handle to remove impedi ments.
- 2. Pressure can be released by pressing down the release lever manually.
- 3. Torsional spring is stuck: Contact your KuDos® service representatives.

Piston action is slow or spongy:

- 1. There is air in the hydraulic system. Follow steps on page 10 to expel any air in the system.
- 2. Insufficient hydraulic fluid. Follow steps on page 10 to add fluid.

Limited Lifetime Warranty

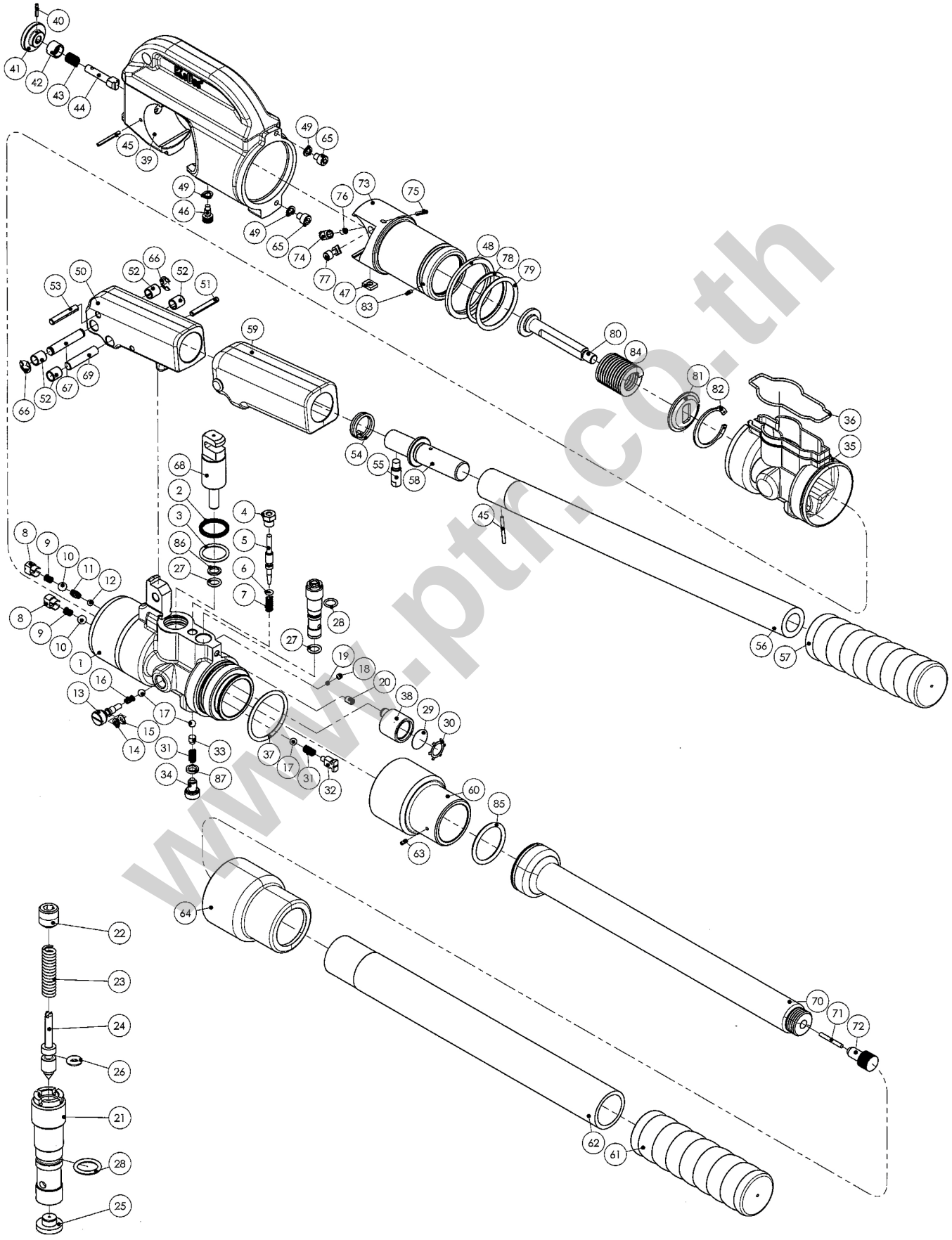
- Kudos® hydraulic products are warranted against defects in materials and workmanship for the life of the product. This is defined as that point in time when the product no longer functions due to normal wear.
- This warranty is subject to the following exclusions and limitations:

    1. This warranty does not cover damages to products which are not installed, operated, used and maintained in accordance with written instructions.
    2. This warranty does not cover products that have been worn out, damaged by improper storage, damaged or otherwise altered, or from disassembly or attempted disassembly by parties other than KuDos® or its authorized service representatives.
    3. This warranty does not cover damages caused by the use of components not manufactured or authorized by KuDos®, acts of God, accidents, or use in a manner for which they are not intended.

- KuDos's liability in all cases is limited to, and shall not exceed, the purchase price paid. Kudos shall not be liable to any buyer for consequential or incidental damages of any kind.
- Batteries, chargers, electric motors, gas engines and cutting blades sold with Kudos products are not covered by this warranty. All electric motors and gas engines are separately warranted by the manufacturer.
- Receipt and warranty card are required for warranty services.
- If the tool is found to be defective, in our sole judgement, Kudos will either repair or replace the defective product or part.
- All revisions in warranty policy and product information will be included in future versions of our manuals. Copies of this warranty are available from the factory upon request.

Parts Guide

UB-412



Part List

No.	PARTS	Q'ty	No.	PARTS	Q'ty
1	CYLINDER BODY	1	48	OIL SEAL	1
2	OIL SEAL	1	49	SPRING WASHER	3
3	O RING	1	50	CAP	1
4	LOCATING SCREW	1	51	SPRING PIN	1
5	RELEASE LEVER	1	52	BUSHING	4
6	O RING	1	53	CONICAL PIN	1
7	COMPRESSION SPRING	1	54	TORSIONAL SPRING	1
8	VALVE SCREW	2	55	RELEASE PIN	1
9	COMPRESSION SPRING	2	56	FPR PIPE	1
10	BALL	2	57	HANDLE GRIP	1
11	COMPRESSION SPRING	1	58	GUIDE BOLT	1
12	BALL	1	59	INSULATION CAP	1
13	SCREW	1	60	EXTENSION TUBE	1
14	BAK UP RING	1	61	HANDLE GRIP	1
15	O RING	1	62	FPR PIPE	1
16	COMPRESSION SPRING	1	63	SPRING PIN	1
17	BALL	3	64	INSULATION TUBE	1
18	SCREW	1	65	SCREW	2
19	BALL	1	66	CRESCENT	2
20	SCREW	1	67	HINGE PIN	1
21~26	RELEIF VALVE SET	1	68	PUMP PISTON	1
27	O RING	2	69	ARRESTING PIN	1
28	O RING	1	70	OIL RESERVOIR	1
29	SOLID FILTER	1	71	MAGNETIC BAR	1
30	PUSH IN FASTENER	1	72	FILLER CAP	1
31	COMPRESSION SPRING	2	73	MAIN PISTON	1
32	VALVE SCREW	1	74	ARRESTING PIN	1
33	BALL SEAT	1	75	SPRING PIN	1
34	VALVE SCREW	1	76	COMPRESSION SPRING	1
35	INSULATION COVER	1	77	LOCATING PIN	1
36	HOOK SPRING	1	78	BACK UP RING	1
37	O RING	1	79	O RING	1
38	FUNNEL	1	80	GUIDE BOLT	1
39	C HEAD	1	81	SPRING HOLDER	1
40	SPRING PIN	1	82	INVERSE RING	1
41	LOCATING RING	1	83	SPRING PIN	1
42	SCREW	1	84	COMPRESSION SPRING	1
43	COMPRESSION SPRING	1	85	O RING	1
44	ARRESTING PIN	1	86	BACK UP RING	1
45	SPRING PIN	2	87	COPPER WASHER	1
46	SCREW	1			
47	GUIDE BLOCK	1			

KuDos®
Your Forever Working Partner

Manufacture & Quality Certificate

We hereby certify that the following KuDos product was manufactured in accordance with our specifications and has passed our quality inspection.

ITEM: HYDRAULIC CRIMPER TOOL

MODEL NO.: UB-412

SERIAL NO.: _____

INSPECTION DATE: _____

Q.C. SUPERVISOR: _____

For KuDos Authorized Distributor Use Only:	For Industry or Individual Buyer Use Only:
/ /	/ /
Date of Purchase (dd/mm/yy)	Date of Purchase (dd/mm/yy)

KuDos Industrail Inc.LLC 15E North St. Dover, DE 10091, USA

KuDos®
Your Forever Working Partner.

Manufacture & Quality Certificate

We hereby certify that the following **KuDos®** product was manufactured in accordance with our specifications and has passed our quality inspection.

KuDos Mechanical Co., Ltd
No.151, Sec. 1, Pei Shen Rd., Shen-Keng District, New Taipei City, Taiwan

For KuDos Authorized Distributor Use Only:	For Industry or Individual Buyer Use Only
_____ / _____ / _____ Date of Purchase (dd/mm/yy)	_____ / _____ / _____ Date of Purchase (dd/mm/yy)

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Your Forever Working Partner.

ISO 9001:2015 | ISO 14001:2015 | IECQ QC 080001 | OHSAS 18001:2007 | UVDB empowered by Achilles Registered

KuDos Mechanical Co., Ltd

Safe Operation & Maintenance Instructions

Hydraulic Compression Tool

UC-6

KuDos® Hydraulic Compression Tools are carefully inspected for quality and tested for safety. We follow ISO 9001: 2015/ ISO 14001: 2015/ IECQ QC 080001/ OHSAS 18001: 2007 & UVDB

ATTENTION!

Safe Operation & Maintenance Instructions must be followed.

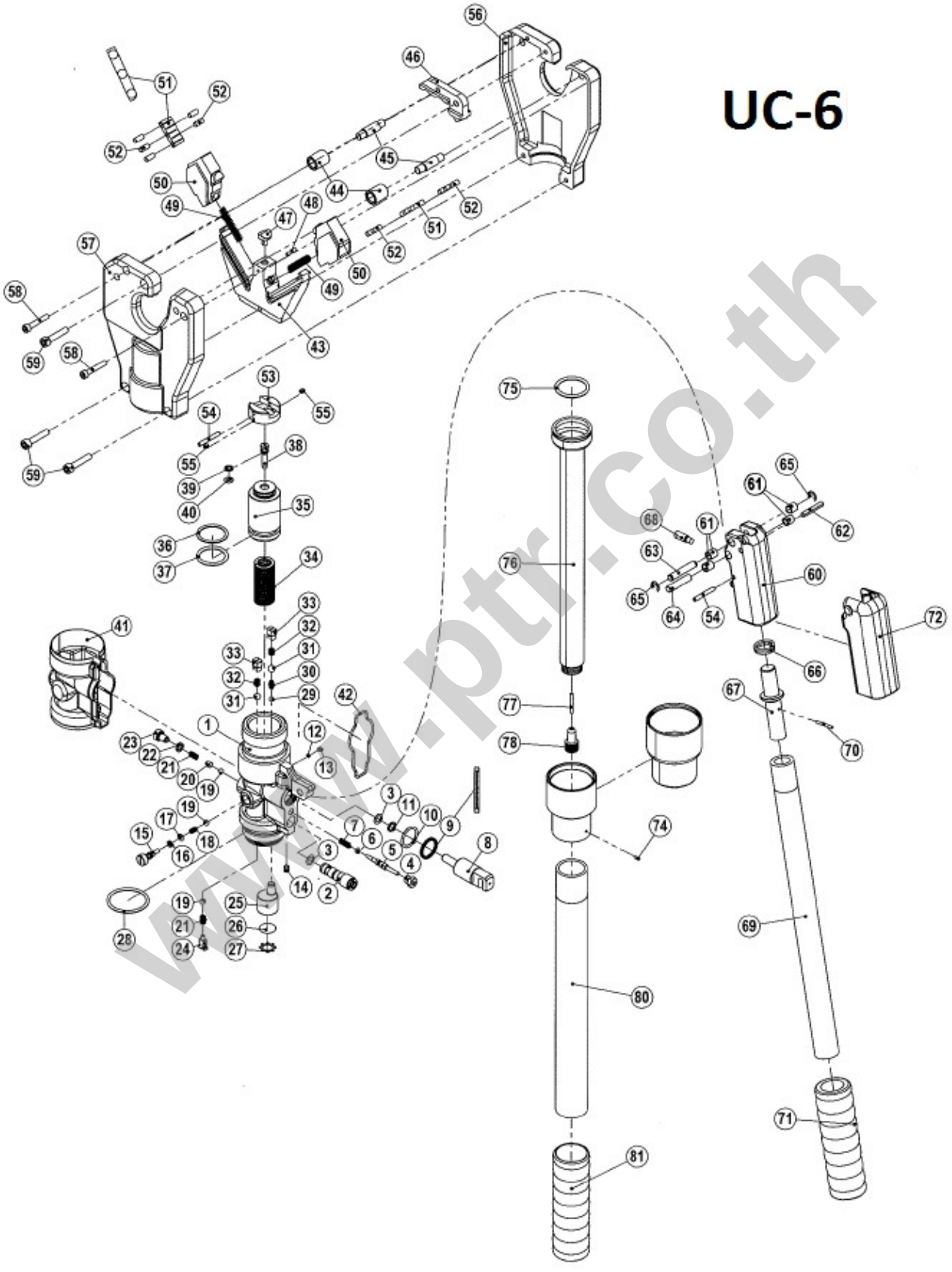
Table of Contents

Table of Components

UC-6

No.	Part	Q'ty	No.	Part	Q'ty
1	Cylinder	1	43	Guide piece	1
2	Relief valve	1	44	Pivot roller	2
3	O-Ring	2	45	Locating pin	2
4	Locating screw	1	46	Indent die	1
5	Release valve stem	1	47	Indent die	1
6	O-Ring	1	48	Spring pin	1
7	Compression spring	1	49	Compression spring	2
8	Pump piston	1	50	Indent ide	2
9	Dust seal	1	51	Bearing retainer	2
10	O-Ring	1	52	Pin	10
11	Back up ring	1	53	Bushing	1
12	Ball	1	54	Spring pin	2
13	Screw	1	55	Screw	2
14	Screw	1	56	Cylinder cover	1
15	Valve screw	1	57	Cylinder cover	1
16	Back up ring	1	58	Screw	2
17	O-Ring	1	59	Screw	3
18	Compression spring	1	60	Cap	1
19	Ball	3	61	Bushing	4
20	Ball seat	1	62	Spring pin	1
21	Compression spring	2	63	Hinge pin	1
22	Copper washer	1	64	Arresting pin	1
23	Valve screw	1	65	Crescent	2
24	Valve screw	1	66	Torsional spring	1
25	Oil screen	1	67	Guide bolt	1
26	Oil screen	1	68	Release pin	1
27	Push in fastener	1	69	Fiber glass pipe	1
28	O-Ring	1	70	Spring pin	1
29	Ball	1	71	Handle grip	1
30	Compression spring	1	72	Insulation cap	1
31	Ball	2	73	Extension tube	1
32	Compression spring	2	74	Spring pin	1
33	Push in fastener	2	75	O-Ring	1
34	Ram spring	1	76	Oil reservoir	1
35	Ram	1	77	Magnetic bar	1
36	Back up ring	1	78	Filler cap	1
37	O-Ring	1	79	Insulation cap	1
38	Screw	1	80	Fiber glass pipe	1
39	Back up ring	1	81	Handle grip	1
40	O-Ring	1			
41	Insulation cap	1			
42	Hook spring	1			

Diagram of Components



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Safety Instructions

■ Follow ALL instructions to ensure safety .

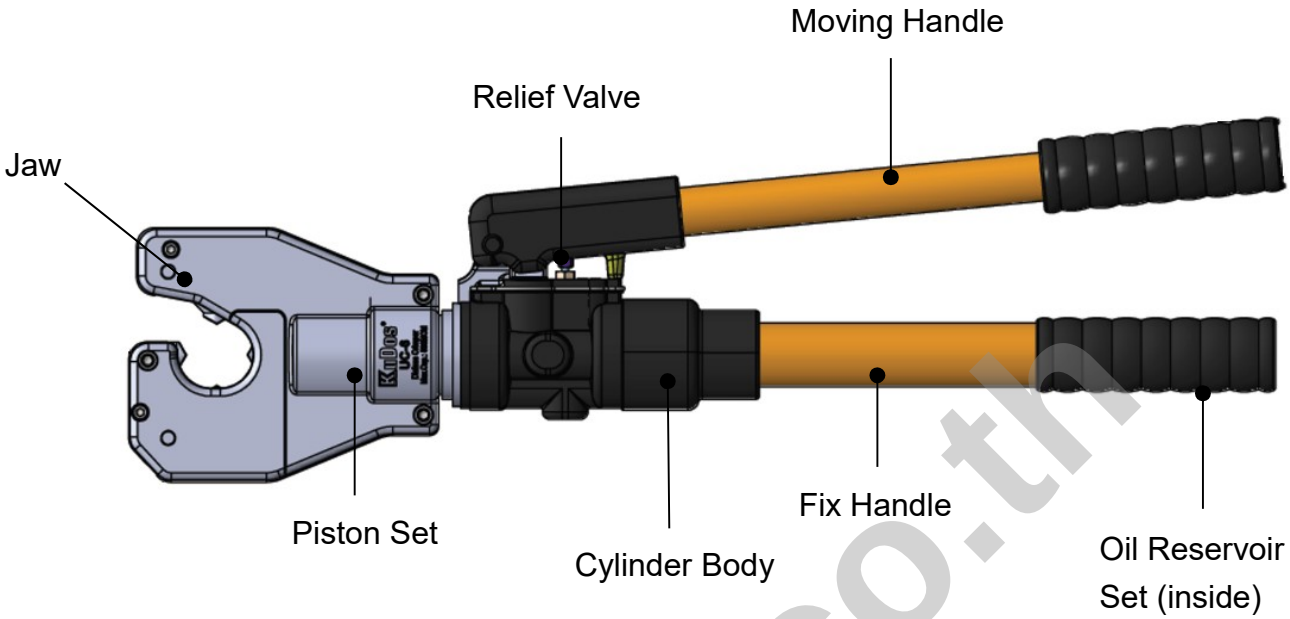
WARNING	
	Work safely. Use both hands to firmly grip the tool handles. Keep hands off the compression section.
	This product is not fully insulated. Proper equipment must be used to avoid electrical shock.
ATTENTION	
	Do not use this tool on glass, plastic, wood or any other materials which could shatter. **Do not exceed the equipment ratings.**
	Always wear safety goggles when operating this product. Projectiles or hydraulic fluid can cause serious injuries.

Oil Refilling:

■ Use only new SHELL T15 hydraulic fluid or equivalent.
■ The hydraulic fluid must be changed every 24 months.
■ Using the incorrect type of oil will damage the seals in the pump and cause the pump to malfunction.

Product Description

■ Subassembly



■ Specifications

- Max. Pressure : 700 bar / 10,000 psi
- Max. Output : 6.4 ton / 62kN
- Jaw opening : 36 mm
- Oil Required : 27 cc
- Dimensions : 627.2mm(L)×195.1mm(W)×65.2mm(H)
- Weight : 6.0 kgs
- Packaging : plastic tool case

■ Functions

- Max. Compression : 29 mm
- 360° rotating tool head
- Adjustable pressure relief valve for overload protection
- Automatic low/high-pressure conversion with rapid/slow operating motion
- Die less type compression crimping tool
- Compression to crimp Anderson style connectors up to 500MCM.

Limited Lifetime Warranty

- Kudos hydraulic products are warrantied against defects in materials and workmanship for the life of the product. This is defined as that point in time when the product no longer functions due to normal wear.

- This warranty is subject to the following exclusions and limitations:

1. This warranty does not cover damages to products which are not installed, operated, used and maintained in accordance with written instructions.
2. This warranty does not cover products that have been worn out, damaged by improper storage, damaged or otherwise altered, or from disassembly or attempted disassembly by parties other than **KuDos®** or its authorized service representatives.
3. This warranty does not cover damages caused by the use of components not manufactured or authorized by **KuDos®**, acts of God, accidents, or use in a manner for which they are not intended.

- **KuDos®**'s liability in all cases is limited to, and shall not exceed, the purchase price paid. Kudos shall not be liable to any buyer for consequential or incidental damages of any kind.

- Batteries, chargers, electric motors, gas engines and cutting blades sold with Kudos products are not covered by this warranty. All electric motors and gas engines are seperately warrantied by the manufacturer.

- Receipt and warranty card are required for warranty services.

- If the tool is found to be defective, in our sole judgement, Kudos will either repair or replace the defective product or part.

- All revisions in warranty policy and product information will be included in future versions of our manuals. Copies of this warranty are available from the factory upon request.

Trouble-Shooting

■ Compression of lugs cannot be completed:

A. Applied cables or terminals are over-specification.
B. Operation instructions were not followed as the product been damaged.
C. Internal leakage: Contact your **KuDos®** service representatives.

■ Handle is stuck or unable to rotate to release pressure:

A. Clean the moving handle to remove impediments.
B. Pressure can be released by pressing down the release lever manually.
C. Torsional spring is stuck: Contact your **KuDos®** service representatives.

■ Dies cannot be set in place or cannot be removed:

A. Deformed C-head or dies. Contact your **KuDos®** service representatives.
B. Clean the grooves on C-head to remove impediments.
C. Clean the die seats on C-head to remove impediments.

■ The piston is stuck or is unable to retract after operation:

The piston may have been deformed by uneven stress distribution when the product was operated with off-centered fittings. Contact your **KuDos®** service representatives.

■ Replace any worn or damaged parts immediately. Do not use parts not supplied by Kudos.
■ Contact KuDos® service representatives to request parts or for problems not shown above.
■ Do NOT attempt to disassemble or repair the product.
■ Kudos hydraulic tools must be serviced by a qualified technician.

<u>Air in the Hydraulic System:</u>

■ Air in the hydraulic system may cause the indent pieces from advancing or cause it to advance slowly. To eject the air from the hydraulic circuit:

1. Position the tool upside-down in a vice with the pump handle in the open position.
2. Unscrew the main handle from the body, then remove the reservoir filler cap(#1).
3. Pump the moving handle a few times to advance the ram.
4. Rotate the pump handle and close it to release the pressure in the hydraulic circuit until the piston is fully retracted and the oil has returned completely into the reservoir.
5. Repeat the process several times to assure that all air bubbles are ejected.
6. Close the rubber reservoir and insert the the reservoir filler cap. Reassemble the main handle.

Operating Instructions

■ Before operation:

1. Make sure all parts of the product are clean and rustless, and no loose parts exist.
2. Check that no leakage occurs while the tool is resting or while the product is tested without cables
3. Hydraulic pressure should be able to reach 700 bar / 10,000 psi while tested without cables.

■ During operation:

1. **Do NOT operate the product without the dies or a connector in place.** It may damage the piston or tool head or the injure the operator.
2. Operation with dies in accordance with the specifications in this handbook is required. Always keep the fitting centered on the tool die and do not use over-specification materials.
3. Stop operating immediately in case of any abnormalities. Refer to the **Trouble-Shooting** section of this manual, if:

    a) **Compression of lugs cannot be implemented.**
    b) **Handle is stuck or unable to be rotated to release pressure.**
    c) **Dies cannot be set in place or removed.**
    d) **Piston is stuck or unable to retract after operation.**

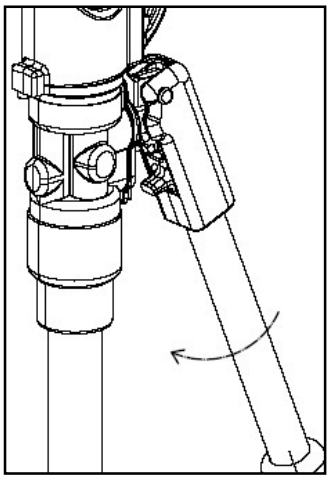
■ After operation:

1. Clean the product and ensure that all pieces are in working condition.
2. Apply rust preventive oil on a regular basis.
3. Always store this tool in the case with the cylinder piston fully retracted.

Maintenance

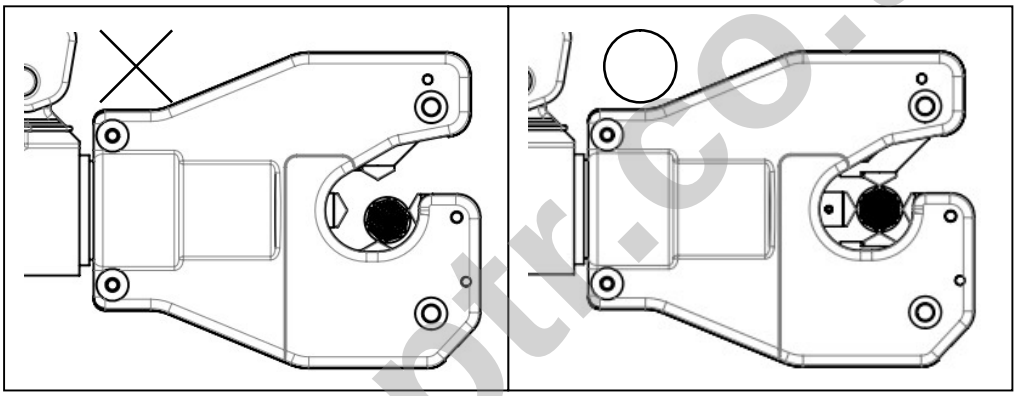
- ■ Keep the tool head free of dirt and metal chips. Use a lubricant to clean the tool when necessary.
- ■ Routine application of rust preventive oil to the product is needed. Avoid bringing the tool into contact with water or solvents.
- ■ Do **NOT** keep this product in places with high temperatures, high humidity, or direct sunlight.
- ■ Suggested working temperatures：-10°C ~ 40°C.
- ■ Hydraulic fluid temperatures over 65°C might cause damages to components sealed inside the product.
- ■ The hydraulic fluid pressure should be adjusted only by **KuDos®** service representatives.
- ■ Inform KuDos® authorized distributors in case of any abnormalities or malfunctions of the product.
- ■ **DO NOT DISASSEMBLE OR ATTEMPT TO REPAIR THIS TOOL.**

Operating Instructions



1. Release the hydraulic fluid pressure and retract the piston before the crimping: Pull out the moving handle and rotate it clockwise, press down the release lever by pushing down the moving handle to return the piston to its starting position.

2. Place the cable and fitting into the opening of the Jaw. The cable and fitting must be positioned at the **CENTER** of the open top to balance the compression.



3. Follow connector specifications and apply the necessary number of crimps. See the diagrams on page 6 for the crimping sequence.

4. Pump the moving handle back and forth to advance the piston.

5. The rapid motion of the piston with low hydraulic pressure will convert to a slow motion with high pressure once the indentors are tightly pressed.

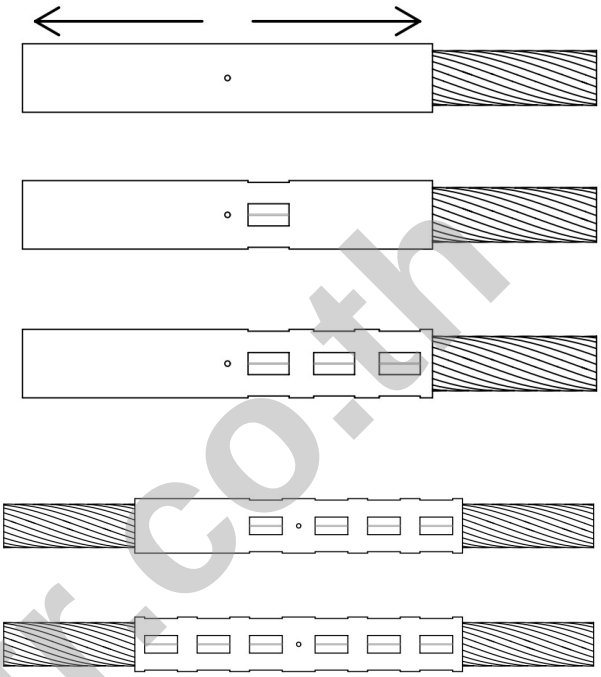
6. The operation will be complete when the hydraulic pressure reaches 700bar pressure and the relief valve releases the internal pressure.

7. Repeat Step 1 to retract the piston and indentors. Repeat the compression process according to your specifications.

Compression Diagrams

■ Sleeve Fittings

Direction of Compression: Single-sided / Outward



■ Terminal Fittings

Direction of Compression: Outward