

Hydraulic Installation Tool

MS-BT20

for 1/2" Meishan Bobtail

P.N. of Tool	MS-BT20	
P.N. of Nose	MS-7880L	
P.N. of Cutting Nose	MS-7880CC	
Operating temp. range	°C	0-60
Noise	dBA	45±3
Max. Vibration	m/s ²	2
Weight of Tool	kg	3
Effective Displacement	mm	51.5
PULL Pressure (Installation)	MPa	28-30
PUSH Pressure (Installation)	MPa	15-20
PULL Pressure (Cutting)	MPa	35-40
PUSH Pressure (Cutting)	MPa	15-20
Standards	EN 2006/42/EG	



Meishan CRRC Fastening System Co., Ltd.

Work with You to Connect the World

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1. Safe

Please read this entire manual carefully. Meishan CRRC Fastening System Co., Ltd.(hereinafter referred as Meishan) assumes no liability for any fire or severe injury caused by failing to follow the instructions provided hereinafter or any damage or personal injury resulted from lack of maintenance or improper operation.

Do not rip off the warning signs, labels or decals. In case of any problem or concern, please contact Meishan for further instructions.

1.1 Work Site

- a. Keep the tool away from flammable liquid, gas and dust.
- b. Do not operate the tool around children or unauthorized personnel.
- c. Keep the tool away from fire and heat sources.

1.2 Personal Safety

- a. Maintain focus and attention on the operation while using this tool. Do not operate the tool when you are affected by fatigue, drugs, alcohol or medical treatment.
- b. Always wear safety goggles, dust mask, anti-skid shoes, safety helmet and ear protections while using the tool.
- c. Dress properly when operating the tool. Do not wear loose clothes or jewelry. Keep your hair and clothes away from the tool's moving parts.
- d. Do not drop or abuse the tool. Reasonable care of the tools by operators is an important factor in maintaining tool efficiency, eliminating downtime, and preventing an accident which may cause severe personal injury.
- e. Keep tools away from children. People who do not understand how to operate

the tool are not permitted to use the tool.

- f. Tool maintenance. Inspect the moving parts for damage and other conditions that may affect the moving of the tool. Repair any part failure before continued use.
- g. Use the proper tool, nose assembly and accessories from Meishan as needed.

1.3 Maintenance Safety

- a. If the tool experiences significant damage or failure, then send the tool to a professional repairman for repair.
- b. Follow this manual for replacement of components and basic troubleshooting.
- c. Keep the tool dry, clean and free of grease.
- d. Replace worn or damaged parts by genuine products from Meishan.

1.4 Specific Safety Rules

Repairmen and Operators must read this manual prior to using equipment and understand all Warning and Caution stickers/labels supplied with equipment before connecting equipment to any primary power supply. As applicable, each section in this manual contains specific safety and information on best practices.

- a. Ear protection is required.
- b. Inspect the collect assembly for wear, cracks or any other visible damage before use.

- c. Please hold the tool firmly, and be ready to counteract any normal or sudden movements with both hands available.
- d. Maintain a balanced body position and secure footing. When operating at height, always check to make sure no one is beneath you.
- e. Use the correct nose assembly for the different type of rivets.
- f. Do not keep the tool continuously running for 10minutes, otherwise, have a break for 3 min after using for 10 minutes continuously.

2. Product data

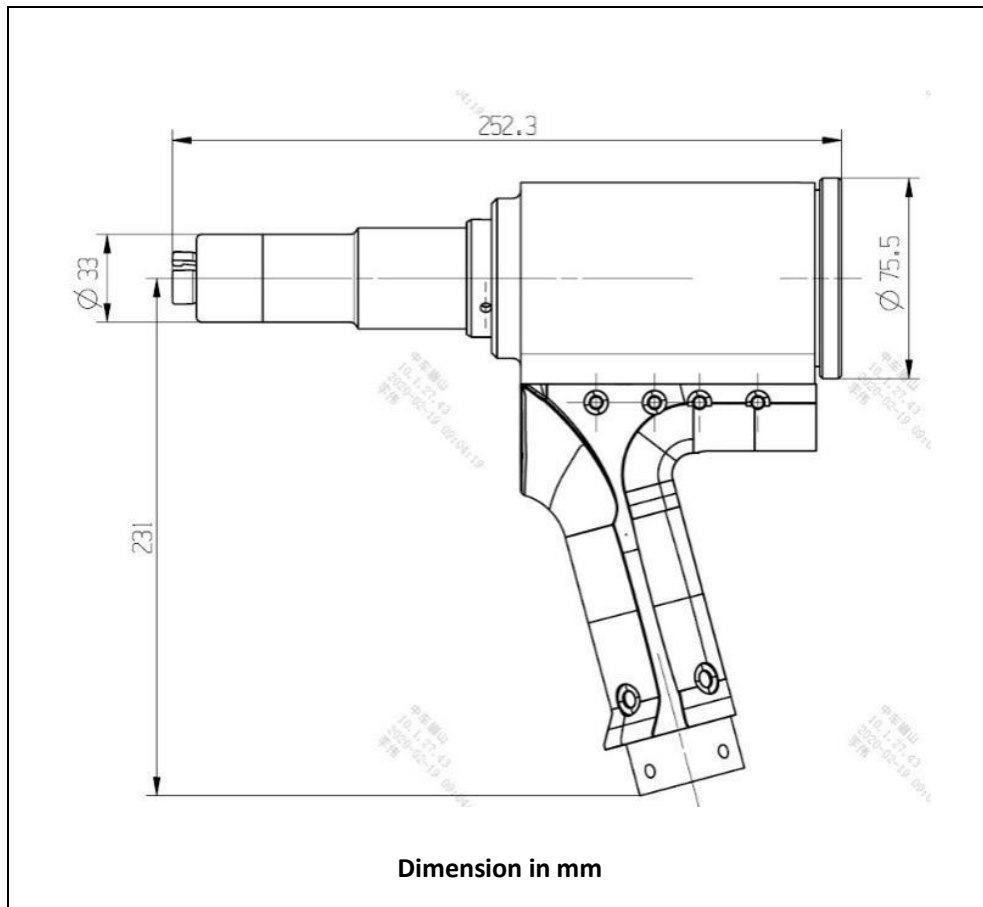
Independently developed by Meishan, The hydraulic tool MS-BT20 with nose assembly MS-7880L equipped, installs 1/2" Mono-tail. The tool is characterized by long service life, light weight, easy operation and low noise.

2.1 Specification

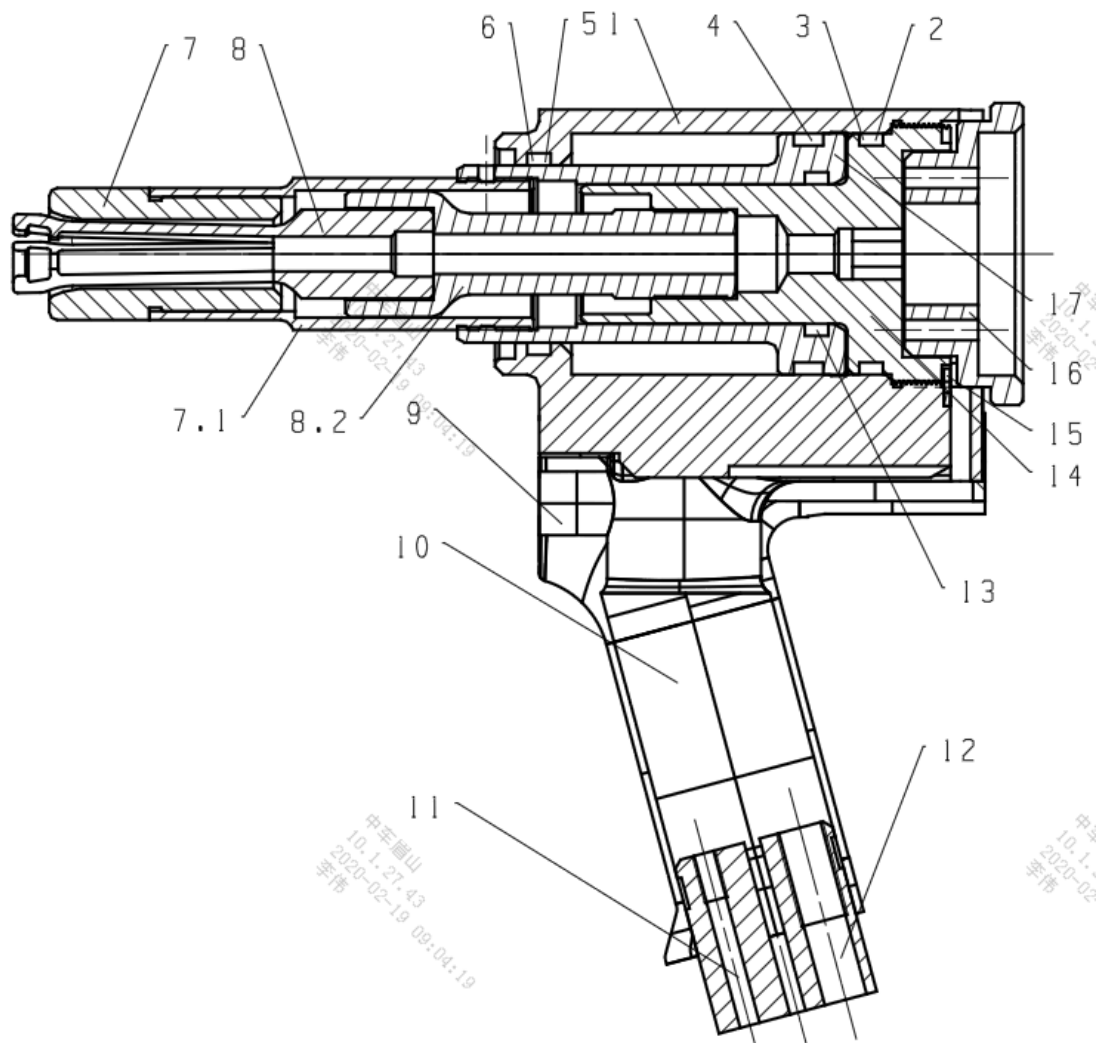
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P.N. of Nose		MS-7880L
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Standards		EN 2006/42/EG

2.2 Overall Dimensions

Overall dimensions of MS-BT20:



2.3 Product Structure and Nomenclature



No.	Description	P.N.	No.	Description	P.N.
1	1. Cylinder assembly	MS-BT20-01	11	11. PULL fluid hose	MS-BT20-07
2	2. Back-up ring	MS-BT20-09	12	12. PUSH fluid hose	MS-BT20-08
3	3- O-Ring	MS-BT20-10	13	13. Polyseal	MS-BT20-14
4	4. GLYD ring	MS-BT20-11	14	14 Connecting base	MS-BT20-04
5	5. Back-up ring	MS-BT20-12	15	15. Set screw	MS-BT20-15
6	6. O-ring	MS-BT20-13	16	16. End cap	MS-BT20-03
7	7. Anvil (nose assembly)	MS-7880L-01	17	17. Piston	MS-BT20-02
8	8. Clamping jaw (nose assembly)	MS-7880-02-D	7.1	7.1- Anvil Connector	MS-7880L-03
9	9. Trigger	MS-BT20-06	8.2	8.2- Jaw Connector	MS-7880L-04
10	10. Tool handle	MS-BT20-05			

3. Operation

3.1 Before Startup

- a. Select the correct nose assembly for the specific fastener to be installed.
(See section 3.2 for the steps of nose installation)
- b. Turn the hydraulic system to OFF and disconnect the power supply from unit, then connect the tool hoses to the tool;
- c. Connect the tool's control switch electrical cord to the hydraulic unit.
- d. Connect the hydraulic unit to the power supply. Turn on the unit. Press the tool's trigger a few times to circulate the hydraulic fluid. Observe the action of the tool and check for any leaks.
- e. Check the PULL and PUSH pressure, if necessary, adjust to the proper pressure.

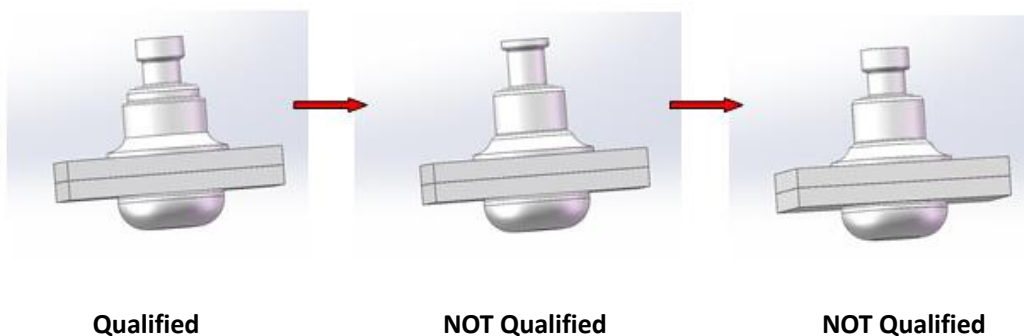
3.2 Assembly of Tool

STEP1: Thread the anvil to the piston.

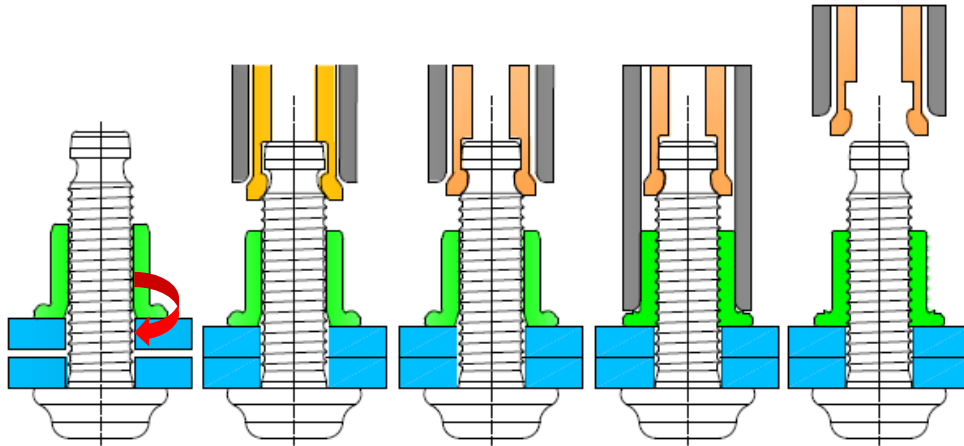
STEP 2: Thread the jaw into the connecting base through the anvil.

3.3 Standard of Riveting

Standard of installed rivet: completely deformed collar and complete pintail.



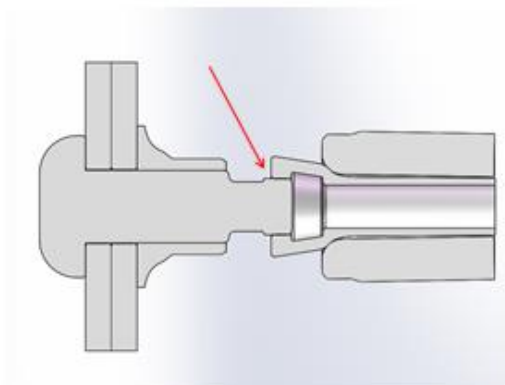
3.4 Sequence of Installation



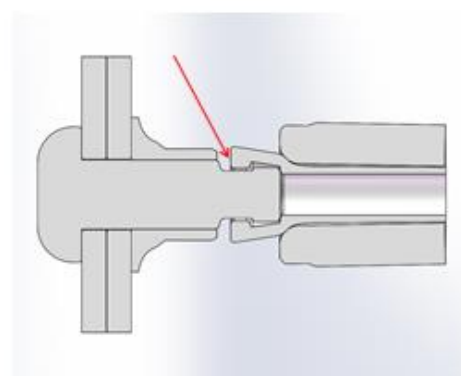
- Thread the collar until the pintail is fully exposed.
- Insert the tool, and make sure the jaws catch onto the proper area of the pintail, as shown above.
- Press and hold the trigger to swage the collar.
- Release the trigger when the collar is fully swaged.

3.5 Typical incorrect operation

Standard correct operation is required to avoid any accidents from occurring. Please follow the figure below, otherwise, the incorrect operation shown below may lead to failure of installation, damage to the tool's moving parts, and even personal injury.



Incorrect operation (Jaws have caught onto the incorrect area)



Correct operation

4. Maintenance

4.1 Caution

- a. Disconnect the tool from power source before maintenance.
- b. Whenever the tool is disassembled (and also at regular intervals depending on length of use) replace all seals, wipers, and back-up rings inside of the tool. Check the cylinder assembly, piston, unloading rod for surface scratches, excessive wear or damage. Replace components as needed.
- c. Check for and clean any foreign debris or dirt out of the nose assembly on a regular basis. Check the nose assembly and tool daily use.
- d. Contact Meishan or its authorized service center for questions on the tool's repair and maintenance.

4.2 Product Service Kit and Performance Parameters

S/N	Description	Drawing No.	Service Life	Remarks
1	Anvil	MS-7880L-01	20000 pulls	Consumables
2	Jaw	MS-7880-02D	4000 pulls	

4.3 Configuration List

Hydraulic riveting tool*1, nose assembly*1

4.4 Replacement of Nose Assembly

The nose assembly is a moving and consumable part. See section 2.3 for the detailed structure diagram.

For replacement of other parts, see section 3.2 and disassemble the nose assembly in the opposite order.

4.5 Replacement of Other Components

In case of any damage to other parts and components, please contact the client service center of Meishan CRRC Fastening System Co., Ltd. We will always be at your service 24 hours a day.

5. Troubleshooting Guidance

Problem	Cause	Solution
Tool fails to operate when trigger is pressed	The hydraulic system failed.	See the Manual of hydraulic unit.
	Loose or faulty hose coupling.	Check and tighten the connection.
	Damaged trigger assembly.	Replace the trigger.
Tool operates in reverse.	Reversed hose connections between hydraulic unit and tool.	Check the hose connections and adjust them to the correct orientation.
Tool leaks hydraulic fluid	Defective tool O-rings or loose connections at tool.	Replace the O rings or tighten the hose.
Hydraulic fluid overheats	Unit not operating properly. Unit is running in reverse.	See the Manual of hydraulic unit.
Tool operates erratically and fails to install fastener properly	Low or erratic hydraulic pressure. Air in system.	See the Manual of hydraulic unit.
	Damaged or worn Piston O-ring in tool.	Replace the O-ring.
	Excessive wear on sliding surfaces of tool parts. Excessive wear on internal cylinder surfaces.	Replace the cylinder or parts.
Pull grooves on fastener pintail stripped during PULL circle.	The operator is not sliding anvil completely onto fastener pintail.	Operate the tool correctly, as per section 3.4.
	Incorrect fastener grip.	Check the grip and replace with proper rivet.
	Worn or damaged jaw segments.	Replace the clamping jaws.
	Foreign debris in jaw grooves.	Clean the jaws
	Excessive sheet gap.	Correct the gap.
	Excessive PULL pressure.	Adjust the pull pressure.

Collar not completely swaged.	Improper tool operation.	Operate the tool correctly as per section 3.4.
	Scored anvil.	Replace the anvil.
Tool "hangs up" on swaged collar of fastener	Improper tool operation.	Operate the tool correctly as per section 3.4.
Jaws in wrong position.	Improper operation.	Check and re-install the spring.

Note: In case of any unsolvable problems, please disconnect the power supply of tool immediately and consult the technicians of Meishan.

APPENDIX 1 - List of Warranty and Life Cycle

	P.N.	Desc.	Warranty	Life Cycle
TOOL	MS-BT20-01	Cylinder ASSY.	1 year/50,000 pulls* ¹	\
	MS-BT20-02	Piston	1 year/50,000 pulls* ¹	\
	MS-BT20-05	Handle	1 year/50,000 pulls* ¹	\
	MS-BT20-07	Pipe	1 year/50,000 pulls* ¹	\
Wear parts	N/A	Seals Kit	20,000 pulls	\
	MS-BT20-06	Trigger Switch	20,000 pulls	\
	MS-7880L-01	Anvil	20,000 pulls	20,000 pulls
	MS-7880-02-D	Jaw	4,000 pulls	4,000 pulls

*1: whichever comes first shall be prevailed.

Note: the Warranty and Life Cycle are based on standard operation and proper maintenance without artificial damage.

Requirements on replacing consumables and wear parts:

1. the trained bench worker is required using specific tools.
2. the warranty period of TOOL components shall NOT be re-calculated by replacing wear parts.
3. if the TOOL is failed during warranty period, send it to Meishan or its authorized service center to repair.

Requirements for use:

1. Check and confirm no obvious crack on tool;
2. Hold tool trigger depressed for 30 seconds; depress trigger a few times to cycle tool and to circulate hydraulic fluid. Observe action of tool and check for leaks.
3. Check and confirm the pressure is correct.

Appendix 2 – Authorized Service center and Agent in Australia

BOKE Engineering Technology Pty Ltd

Address : 18 Emerald Street, Murarrie, QLD 4172, Australia

Contact: William He

Mobile: +61 4 3405 7768

Email: boke.service@bketec.com



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