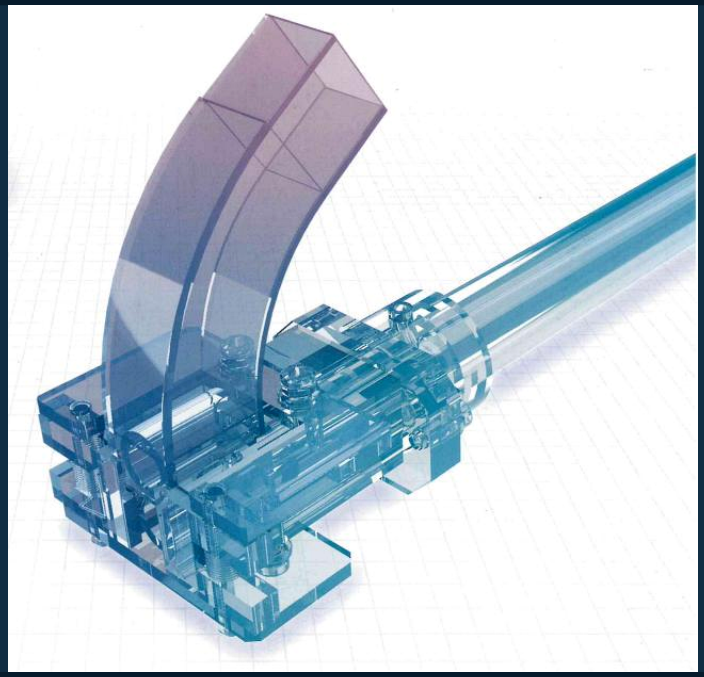
WELDPARTS USA

NUT & STUD FEEDER

Product & Operating Guide

A practical reference for feeder application, components, standard parameters, controller functions, operating sequence, inspection, and ordering requirements.





APPLICATION-SPECIFIC SYSTEM

6500 Corporate Drive • Cincinnati, OH 45242
(513) 530-0064 • weldparts.com

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APPLICATION & COMPATIBILITY

Each feeder is configured for a specific nut or stud style. A feeder built for one specification is not intended to handle a different size or geometry without reconfiguration.



Square weld nut



Hex nut



Round weld nut



Flange nut



Stud / bolt

1. Confirm the exact nut or stud geometry before ordering or retooling the feeder.
2. Confirm installation position, supply direction, and the interface to the welding machine.
3. Part geometry and machine configuration determine the final feed-gun and tooling design.

FEEDER SYSTEM COMPONENTS



COMPONENT IDENTIFICATION

01 Dust cover

02 Hopper / material bin

03 Vibratory bowl

04 Vibrator base

05 Controller

06 Stand

07 Conveyor tube

08 Feed gun

09 Bent bar support

10 Solenoid valve

11 Air filter / pressure regulator

12 Proximity switch

13 Projection welding machine (not included)

STANDARD PARAMETERS

Standard configuration - application-dependent

Electrical	Specification
Power supply	AC 220 V
Power frequency	50 Hz
Controller voltage	AC 100 V / DC 24 V
Input power	250 VA
Power consumption	Approx. 350 VA
Compressed air	0.3-0.7 MPa, depending on nut size

Mechanical / Environmental	Specification
Vibratory body	250 mm (standard)
Vibratory bowl	300 mm (standard)
Supply capacity	Approx. 35 parts/min
Delivery pipe	2 m standard
Body color	Ice gray
Weight	Approx. 90 kg, including feed gun
Operating temperature	-5 to +40 °C
Operating humidity	Below 80% RH
Overall dimensions	H 1100 x L 300 x W 650 mm



CONFIGURATION NOTE

These are the source document's standard parameters. Final feeder dimensions, feed-gun structure, and required air pressure may vary with nut geometry and the welding-machine interface.

Ordering information on page 10 asks the customer to provide a 220 V primary power supply and an air source of at least 0.4 MPa; the final operating pressure depends on nut size.

CONTROLLER FUNCTIONS



1 Indicator light
When power is switched ON, the ON indicator illuminates and the OFF indicator is off.

2 Power switch
Main toggle used to switch feeder power on and off.

3 Hold / Second Start / Non-Hold
Hold: one start signal is held until the weld cycle ends.
Second Start: first signal sends the nut; second signal starts the welder only.
Non-Hold: the start signal must remain active through the end of welding.

4 Automatic / Manual
Automatic: feeder and spot welder operate in sequence.
Manual: feeder automatic operation stops; the welding machine can operate separately and the telescopic rod can be jogged.

5 Extend / Return
Used in Manual mode to confirm and adjust the relative position and angle of the lower electrode positioning pin and the telescopic rod. Extend moves the push-out lever forward; Return retracts it into the feed gun.

OPERATING SEQUENCE

Normal part-delivery and welding cycle

1

Place workpiece

Operator places the workpiece on the location pin.

2

Start ON

Step on the foot switch pedal or press the start button.

3

Nut delivery

The push-out rod extends and delivers the nut to the location pin.

4

Welding

The push rod retracts and the weld signal is output; the welding machine performs the weld.

5

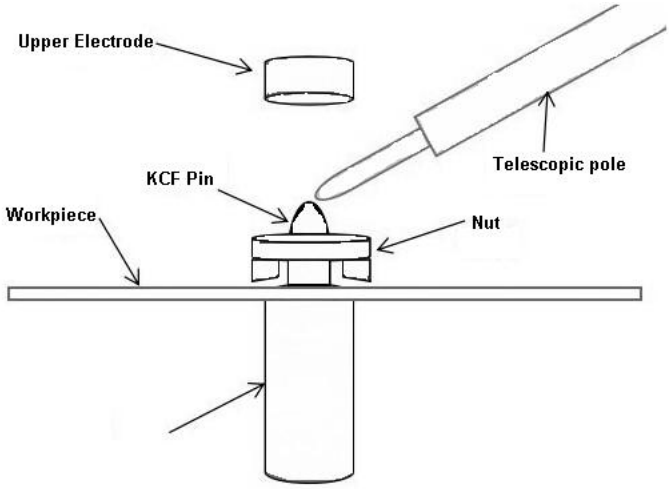
End of process

Remove the welded workpiece.

CYCLE AT A GLANCE

Workpiece positioned → start signal → nut delivered → push rod retracts → weld signal → finished part removed.

Follow the welding machine manufacturer and facility procedures during setup and service.



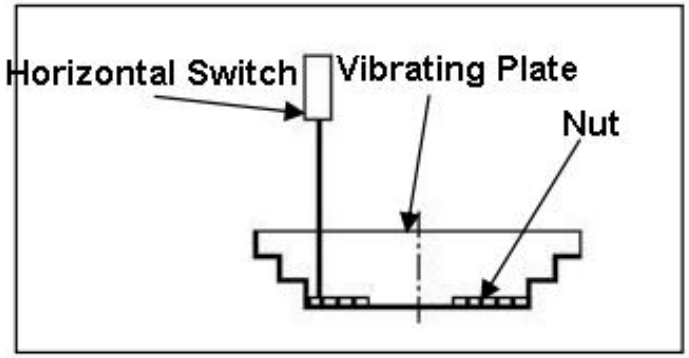
FEEDER INTERNAL SEQUENCE

1 Start signal
Foot switch or start button initiates the cycle.

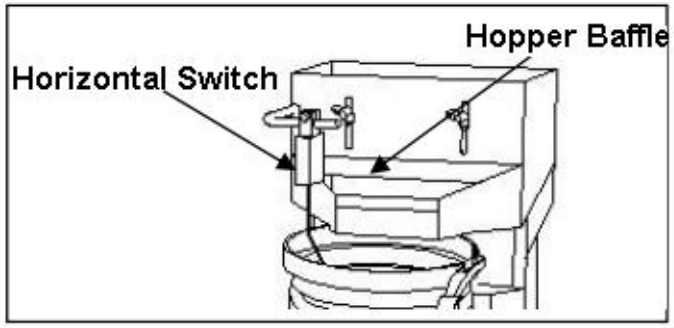
2 Nut delivery
Push-out rod extends and delivers the nut to the location pin.

3 Nut replenishment
When the proximity switch senses fewer nuts in the conveying pipe, the vibratory bowl starts. Nuts enter the pipe and are moved by air pressure toward the feed-gun head.

4 Material-bin replenishment
When the nut level in the vibratory bowl decreases, the micro switch triggers the hopper to add more nuts to the bowl.



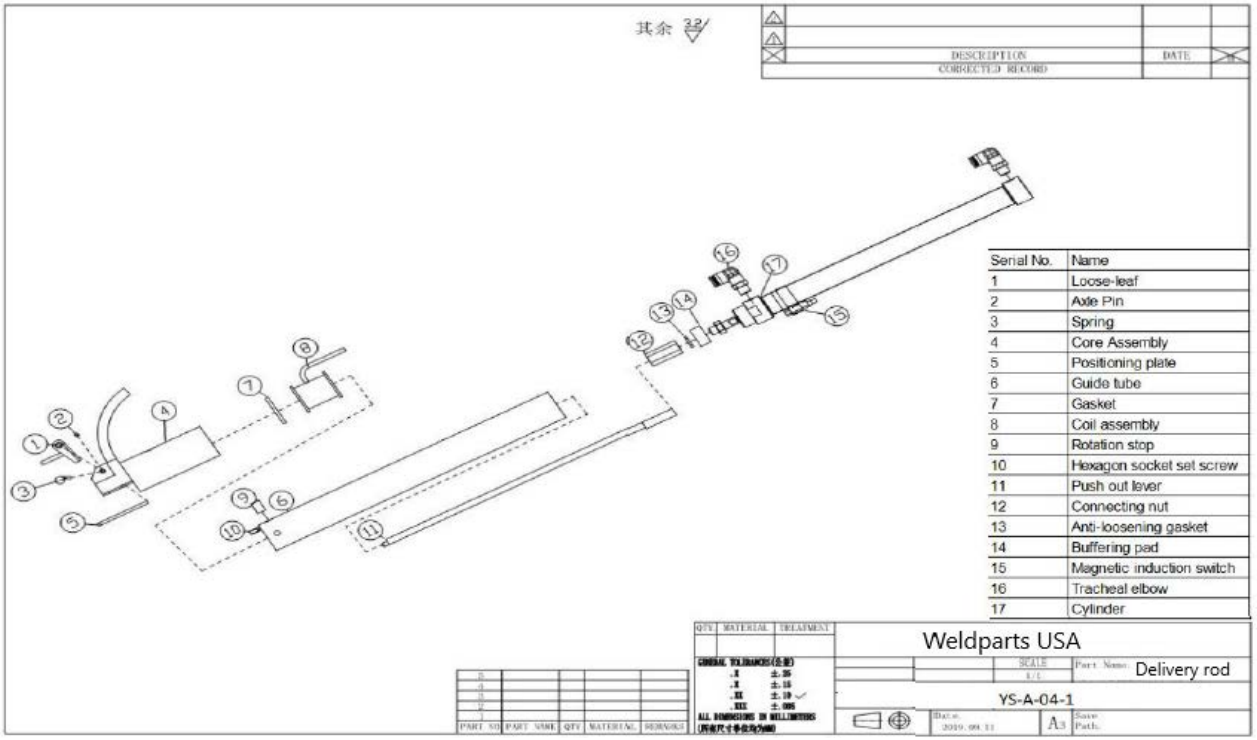
VIBRATORY BOWL LEVEL SENSING



HOPPER / MATERIAL-BIN REPLENISHMENT

FEED GUN STRUCTURE

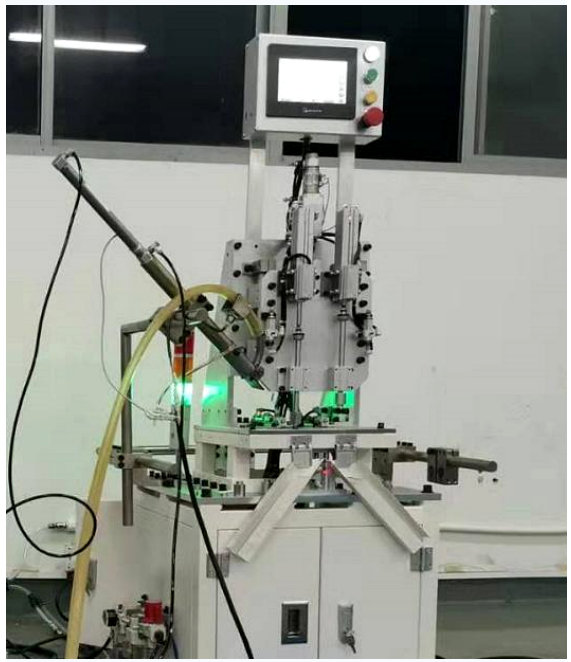
Representative schematic - actual structure varies by nut



No.	Component
1	Loose-leaf
2	Axle pin
3	Spring
4	Core assembly
5	Positioning plate
6	Guide tube
7	Gasket
8	Coil assembly
9	Rotation stop
10	Hex socket set screw
11	Push-out lever
12	Connecting nut
13	Anti-loosening gasket
14	Buffering pad
15	Magnetic induction switch
16	Pneumatic elbow
17	Cylinder

Note: The drawing is schematic. Actual size and construction vary with the nut or stud application.

FACTORY INSPECTION & VALIDATION





ACCEPTANCE TARGET

10,000

REPEATED TRANSPORT CYCLES

No defects for product qualification

TESTING STANDARDS

1. The inspection machine simulates the projection-welding sequence used to convey and pressurize the part.
2. Customer-supplied nuts are conveyed and tested for feeder suitability.
3. A conveying failure triggers an alarm immediately.
4. Qualification requires 10,000 repeated transport cycles with no defects.
5. If an issue occurs during testing, the count is restarted from 0 and the full test is repeated.
6. Failures during testing are recorded by the inspection machine for review.

ORDERING INFORMATION

PLEASE TELL US

1. The feeder-body installation position.
2. The installation direction and angle of the supply-device combination.
3. The welding-machine type (medium-frequency or industrial-frequency) and electrode form.
4. The welding-machine operating rhythm / cycle.
5. The nut style and whether the nut is oily.

PLEASE PROVIDE

1. Approximately 500 sample nuts for feeder testing.
2. A 3D model of the workpiece or the actual workpiece (confirm details with sales).
3. A 220 V primary power supply for the feeder.
4. An air source of at least 0.4 MPa. Required operating pressure varies with nut size.

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