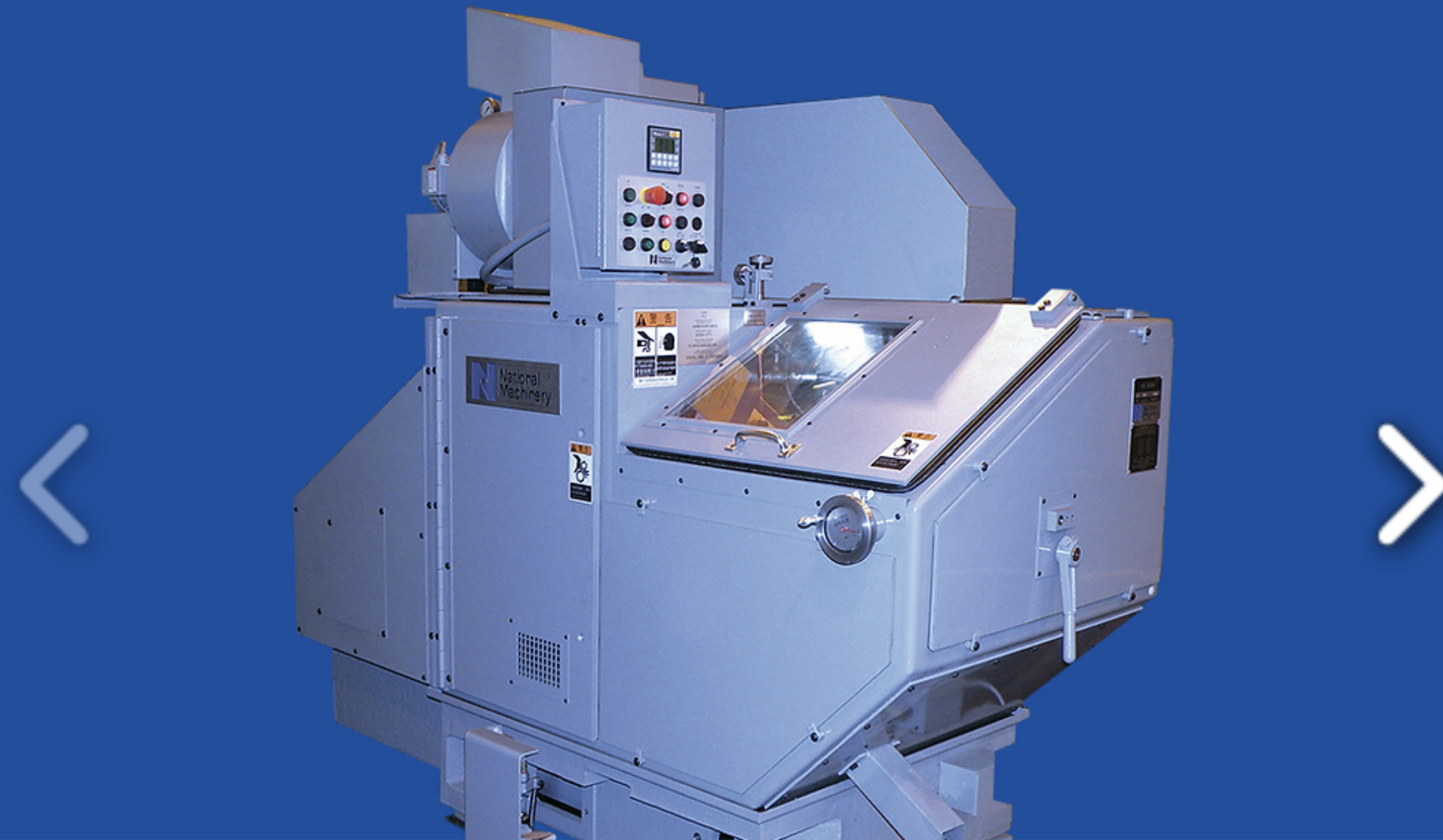


# Ball Headers

- Faster speeds for more production output.
- Many easy-to-use quick-change features within reach of the operator, allow for increased production time.
- Fixed kickout stroke for faster job changeover and set-up.
- Less flash required than ever before.
- Precision tolerances are maintained throughout high-volume production runs using ball bearing steels.
- Production runs of a million or more close tolerance ball blanks are common before reworking dies.
- 88-92% machine utilization is typical.
- Machine reliability is so high that a ghost shift is often practical



**Ball Header**

1/1

Size	PPM	Min. Finished Ball Diameter	Max. Finished Ball Diameter
31	920	1	3
51	920	2.5	5
81	710	3	8
111	525	5	11
141	425	7.5	14
201	300	11	20

*All dimensions are in millimeters unless otherwise noted.*



# Roller Headers

- Rugged, cam-driven, in-line kickout for practical high-speed production of single blow parts.
- Parts can be formed in the die to precise lengths and diameters.
- Modular front and side camshafts are readily accessible for ease of inspection and maintenance, increasing available production time.
- Same quick-change features as Ball Headers plus easy single-dial adjustment for kickout.
- Unattended operation is practical to meet high-volume production demands.



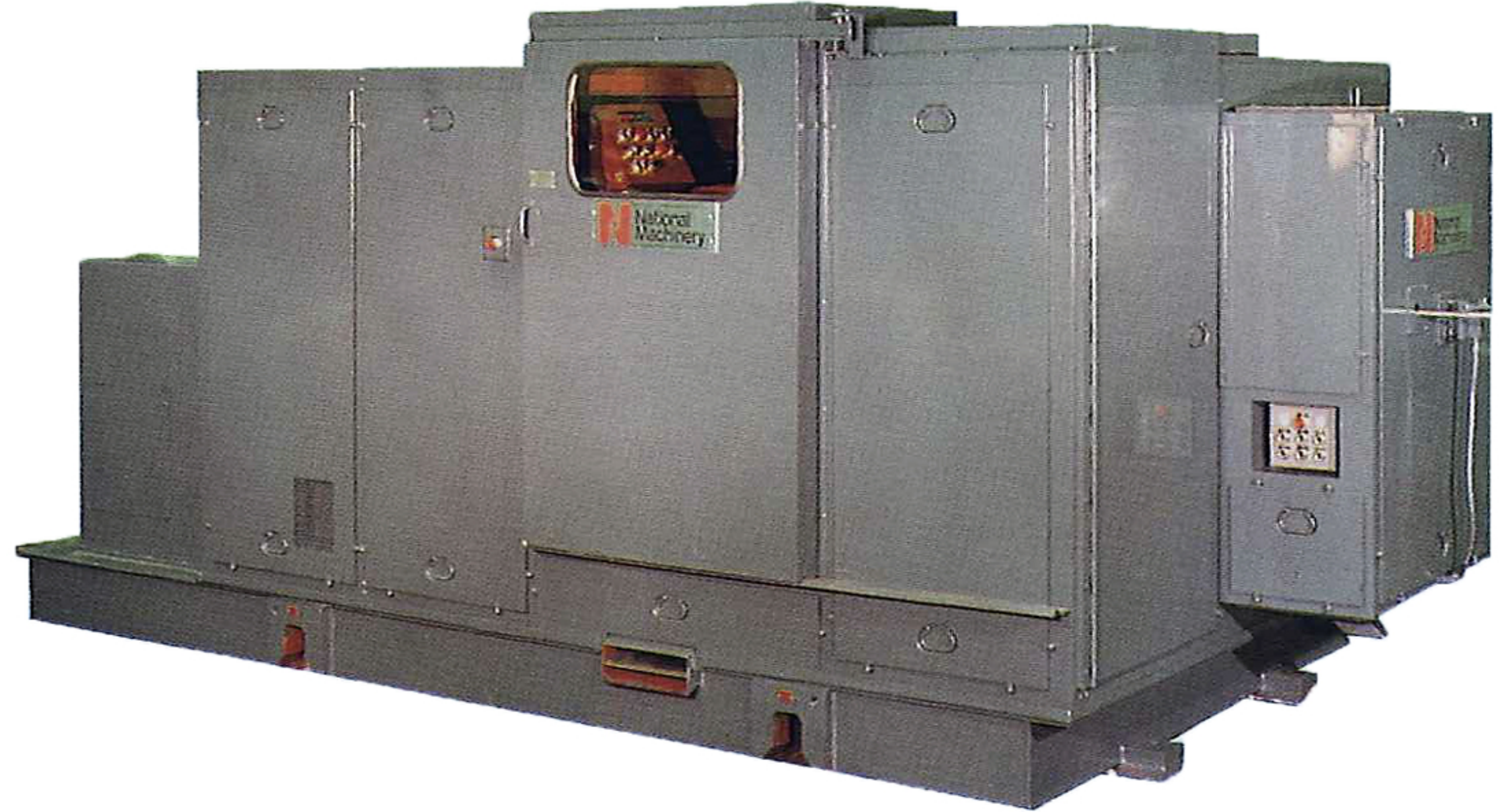
Size	PPM	Cutoff Diameter	Die Kickout Min/Max
61	630	6	6/13
81	470	8	8/18
101	380	10.6	9.5/24
161	260	16	13/32

*All dimensions are in millimeters unless otherwise noted.*



# Combi Headers

- Quick-change features facilitate the production of a few thousand to several million parts.
- Like the Ball and Roller Headers, Combi Headers can operate unattended.



Size	PPM	Cutoff Diameter	Die Kickout Min/Max
161	260	16	4/32
241	140	24	6/40

*All dimensions are in millimeters unless otherwise noted.*