

CATALOG No. 16
EDITION OF 1924

HORTON CHUCKS

MELVIN W. CRAWFORD
FACTORY TOOL

Genuine "MORSE" Tools - -
Thompson Band Saws - Milford
314 E. Jefferson Ave. - - -

THE E. HORTON & SON CO.
WINDSOR LOCKS, CONN., U. S. A.

HOPKINSON
CHUCKS

CATALOG No. 16

EDITION OF 1924

THE
E. HORTON & SON Co.

WINDSOR LOCKS, CONN., U. S. A.

ESTABLISHED 1851

MANUFACTURERS OF
LATHE CHUCKS,
FACE-PLATE JAWS
AND DRILL CHUCKS

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1924



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CABLE ADDRESS: Horton, Windsor Locks.

Either Leibers, A. B. C., or Western Union Code used.

In this catalog is a code for each chuck and the following list gives code for ordering and shipping instructions:

Ship by freight at once—Krate.

Ship by express at once—Krex.

Wire net price and delivery on—Kinet.

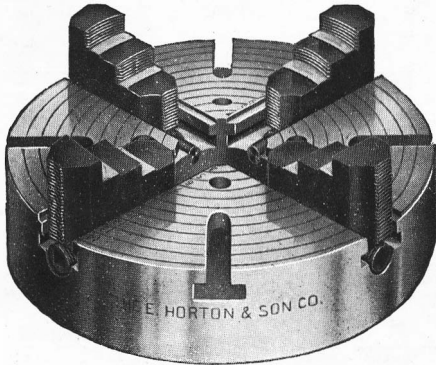
Wire discounts on—Kidisc.

Wire earliest delivery on—Kidiv.

Enter order, shipping instructions will follow—Kenord.

Mail price discounts and delivery on—Kemail.

HORTON Improved Iron Body Independent 4-Jaw Chuck. Reversible Jaws. Model 50



Important features of this chuck are:

Large diameter screws with mortise end for operating wrench.

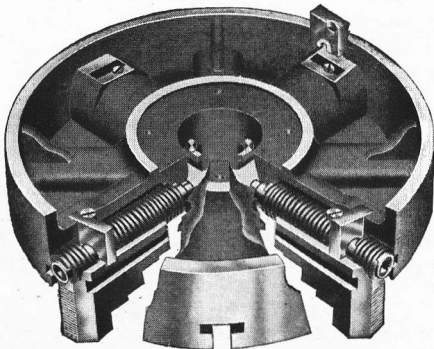
Hardened steel thrust bearings held absolutely rigid in chuck body.

Thrust Bearings placed near the outer end of screw where they are better protected from chips.

Jaws have the HORTON raised seat and are ground true with the face-plate recess.

Unusually heavy cross sections in body.

T slots in sizes from 12-inch up.

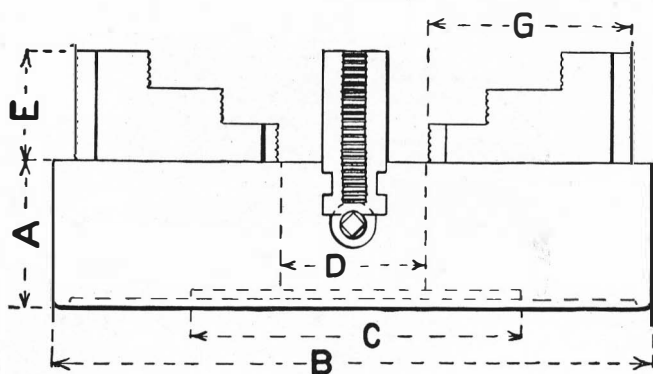


Back View of HORTON Model 50

(Showing method of inserting Steel Thrust Bearings.)

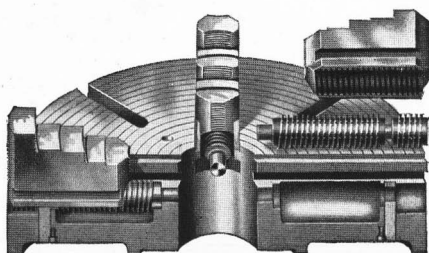
For 3-Jaw Independent Chucks, see page 10.

For Steel Independent Chucks, see page 11.



Approximate Dimensions of HORTON Model 50
Independent Chuck

Rated Size, Inches	A	B	C	D	E	G	Approx. Weight, Pounds
4 in.	$1\frac{7}{8}$	$4\frac{1}{2}$	4	1	$\frac{7}{8}$	$1\frac{11}{16}$	8
6 in.	$2\frac{7}{16}$	$6\frac{1}{4}$	$5\frac{11}{16}$	$1\frac{1}{2}$	$1\frac{5}{16}$	$2\frac{5}{8}$	20
8 in.	$3\frac{1}{8}$	$8\frac{1}{4}$	$4\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{7}{16}$	$3\frac{3}{8}$	41
9 in.	$3\frac{1}{4}$	$9\frac{1}{4}$	$5\frac{11}{16}$	2	$1\frac{7}{16}$	$3\frac{3}{8}$	47
10 in.	$3\frac{1}{4}$	$10\frac{1}{4}$	6	2	$1\frac{7}{16}$	$3\frac{3}{8}$	50
12 in.	$3\frac{5}{8}$	$12\frac{1}{4}$	$6\frac{11}{16}$	3	$2\frac{1}{4}$	$4\frac{5}{8}$	85
14 in.	$3\frac{3}{4}$	$14\frac{1}{4}$	$6\frac{11}{16}$	3	$2\frac{1}{4}$	$4\frac{5}{8}$	99
15 in.	4	$15\frac{1}{4}$	$7\frac{13}{16}$	3	$2\frac{1}{4}$	$4\frac{5}{8}$	118
16 in.	4	$16\frac{1}{4}$	$7\frac{13}{16}$	3	$2\frac{1}{4}$	$4\frac{5}{8}$	127
18 in.	4	18	$7\frac{13}{16}$	4	$2\frac{3}{16}$	$5\frac{1}{4}$	159
20 in.	$4\frac{5}{8}$	20	$7\frac{13}{16}$	4	$2\frac{3}{4}$	$5\frac{7}{8}$	205
22 in.	$4\frac{5}{8}$	22	$9\frac{1}{2}$	$4\frac{3}{4}$	$2\frac{3}{4}$	$5\frac{7}{8}$	240
24 in.	$4\frac{1}{2}$	24	$9\frac{1}{2}$	$4\frac{3}{4}$	$2\frac{3}{4}$	$5\frac{7}{8}$	280
26 in.	$4\frac{3}{4}$	25	13	$5\frac{1}{2}$	$3\frac{1}{16}$	$7\frac{1}{8}$	345
28 in.	$4\frac{3}{4}$	$27\frac{1}{2}$	13	$5\frac{1}{2}$	$3\frac{1}{16}$	$7\frac{1}{8}$	382
30 in.	5	29	15	6	4	8	450
36 in.	5	$35\frac{1}{8}$	18	$7\frac{1}{4}$	4	8	540
42 in.	5	$40\frac{1}{2}$	18	$7\frac{1}{4}$	4	8	720



Sectional View of HORTON Model 50 Independent Chuck

(Showing Hardened Steel Thrust Bearings)

The *Thrust Bearings* are made of hardened steel and placed where they are protected from chips. These bearings are removable, as they are held in place by fillister head screws.

List Prices. Model 50

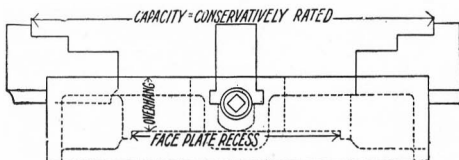
Rated Size, In.	List Price	Code	Rated Size, In.	List Price	Code
4 in.	\$20.00	Abbot	18 in.	\$54.00	Alma
6 in.	22.00	Accord	20 in.	62.00	Alpine
8 in.	26.00	Acra	22 in.	70.00	Alsen
9 in.	28.00	Adams	24 in.	80.00	Altay
10 in.	30.00	Adrian	26 in.	93.00	Altmar
12 in.	35.00	Afton	28 in.	110.00	Amber
14 in.	40.00	Albion	30 in.	130.00	Ames
15 in.	43.00	Alcove	36 in.	210.00	Andes
16 in.	46.00	Alden	42 in.	320.00	Arena

Parts for Improved Iron Body Independent Chucks. Model 50

List Prices

Size	Body	Jaws Set of 4	Screws Each	Wrench	Bolts with Nuts Each
4 inch	\$10.00	\$8.00	\$1.00	\$1.50	\$0.25
6 inch	12.00	10.00	1.00	1.75	.35
8 inch	13.00	16.00	1.40	1.75	.40
9 inch	16.00	16.00	1.50	2.00	.40
10 inch	17.00	16.00	1.60	2.00	.40
12 inch	20.00	24.00	1.75	2.25	.45
14 inch	22.00	24.00	1.85	2.25	.45
15 inch	24.00	24.00	2.00	2.25	.45
16 inch	26.00	24.00	2.25	2.25	.45
18 inch	29.00	30.00	2.50	2.75	.45
20 inch	34.00	36.00	3.00	3.25	.50
22 inch	42.00	36.00	3.50	3.25	.65
24 inch	48.00	36.00	3.75	3.25	.65
26 inch	63.00	44.00	4.00	3.75	.65
28 inch	78.00	44.00	4.50	3.75	.65
30 inch	88.00	50.00	5.00	4.50	.90
36 inch	138.00	60.00	8.00	4.50	.90
42 inch	215.00	60.00	12.00	4.50	.90

DESIGN OF Independent Chucks, Models 53-60 Iron and Steel



Sizes and Capacity



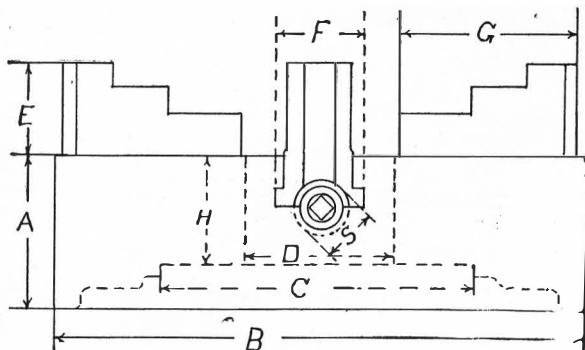
In the tables, the capacity of chucks is given when the jaws are extended only $\frac{1}{2}$ of their length. This is a conservative estimate of the safe capacity as it is possible to run the jaws out from $\frac{1}{2}$ to $\frac{3}{4}$ of their length and still have sufficient screw threads in engagement with the jaw, but the capacity stated is within a safe figure for all ordinary work. It is quite evident that when the jaws are run out to this point the swing required is 2 in. to $3\frac{1}{2}$ in. greater than this dimension of capacity.

It is therefore well to make sure that the chuck selected is not too large in size for practical use. For instance, a 16 in. chuck is plenty large enough for a lathe that swings 18 in. An 18 in. chuck is large enough for lathes of 20 in. to 22 in. swing, and a 22 in. chuck for a lathe of 24 in. or 26 in. swing. With the above facts in mind, we have proportioned these chucks so that there are a sufficient number of sizes to fit any ordinary requirement.

The diameter of the hole through the chuck is often of importance, as work having a long hub may be passed back into the center hole of the chuck. The large diameter of the hole may be a help in fitting the chuck closer back to the spindle bearing — see page 46 for illustration of fitting, using the large hole in chuck for the face-plate hubs.

The distance from the face-plate recess has been kept down to a minimum, this being given in dimension "H" in the tables on page 8. It will be apparent how the lessening of the overhang affects the strain and wear on the spindle and bearings of the machine.

The rim of the chuck is wider than usual to give the necessary stiffness to the body casting, and to stand the strain of the unusual power which can be applied by the long wrenches and heavy screws.



Approximate Dimensions of HORTON Three-Jaw Independent Chucks. Model 53. See opposite page

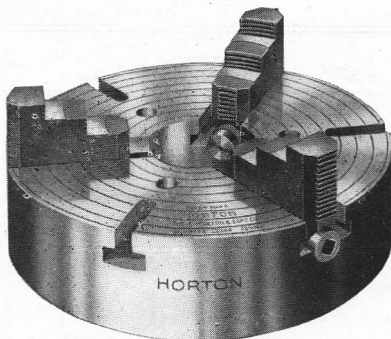
Rated Size	Capacity	A	B	C	D	E	*F	G	H	S
8 in.	8½	2¾	7¾	4¾	2¼	1½	1½	2⅞	2	1⅞
10 in.	11	3⅝	10¼	6	2¾	2⅞	2	4	2⅜	1¼
12 in.	13	3½	12¼	7⅞	3½	2⅞	2	4	2½	1¼
15 in.	16½	3⅞	15¼	7⅞	4	2⅞	2½	5	2⅝	1½

Approximate Dimensions of HORTON All STEEL Independent Chucks. Model 60. See page 11

Rated Size	Capacity	A	B	C	D	E	*F	G	H	S
8 in.	8½	2¾	7¾	4¾	2⅞	1½	1½	2⅞	2	1⅞
10 in.	11	2⅞	10¼	6	2¾	2⅞	2	4	2¼	1¼
12 in.	13	2⅞	12¼	7⅞	3½	2⅞	2	4	2¼	1¼
14 in.	15½	3⅞	14¼	7⅞	3½	2½	2½	5	2½	1½
16 in.	17½	3⅞	16¼	7⅞	4	2½	2½	5	2½	1½
18 in.	19½	3⅞	18¼	10	4½	2½	2½	5	2½	1½
20 in.	22	4¼	20¼	10	4½	2⅝	2⅝	6½	3⅞	1¾
22 in.	24	4¼	22¼	10	5	2⅝	2⅝	6½	3⅞	1¾
24 in.	26	4¼	24¼	12	5	2⅝	2⅝	6½	3¼	1¾
26 in.	28	4¼	26¼	12	6½	2⅝	2⅝	6½	3¼	1¾
28 in.	30¼	4⅝	28¼	15	6¾	3¾	3	8	3¾	2⅞
30 in.	33	4⅝	31	15	7	3¾	3	8	3¾	2⅞
36 in.	39	5	35	18	7½	3¾	3	8	3¾	2⅞

*Jaws 8"—18" incl. as shown in cut. Larger sizes are same width at top of jaw as at base.

HORTON Heavy Iron Body Independent 3-Jaw Chuck. Reversible Jaws. Model 53



These chucks are carefully designed to provide the accuracy and all-round extra finish especially desired for tool room and similar work.

They have broader bearings and uniformly larger sections than usually provided.

Strength of screws is one of the marked features. Screws are supported on three journal bearings. Two thrust bearings distribute the end thrust.

The broad base and increased width of the jaws affords them better support and also allows greater engagement between the screw and jaw.

To insure accuracy and finish, the chucks are ground all over and the jaws also are ground true with the face-plate recess and on the bites.

List Prices and Code Words, Model 53 3-Jaw Independent Chucks

Size	List Price	Code Word	Hole through Chuck	Diam. Recess	Approx. Weight
8 in.	\$24.00	Canaan	2 $\frac{1}{4}$	4 $\frac{3}{4}$	25 lbs.
10 in.	28.00	Catlin	2 $\frac{3}{4}$	6	46 lbs.
12 in.	32.00	Cato	3 $\frac{1}{2}$	7 $\frac{1}{16}$	70 lbs.
15 in.	40.00	Caton	4	7 $\frac{13}{16}$	108 lbs.

[Refer to this page as page 10.]

Parts for
Heavy Iron Body Independent 3-Jaw Chuck
Model 53

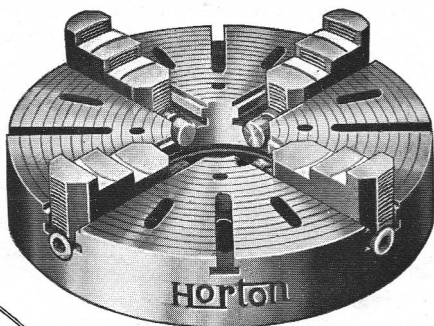
Size	Body	Jaws, Sets of Three	Screws, Each	Wrench
8 in.	\$13.00	\$13.50	\$1.50	\$1.75
10 in.	17.00	20.25	1.90	1.75
12 in.	20.00	20.25	2.10	2.00
15 in.	24.00	24.75	2.50	2.25

Parts for All Steel Independent Chucks
Model 60

Size	Jaws, Sets of Four	Screws, Each	Wrench	Bolts, with Nuts, Each
8 in.	\$18.00	\$1.50	\$1.75	\$0.40
10 in.	27.00	1.90	1.75	.40
12 in.	27.00	2.10	2.00	.45
14 in.	33.00	2.30	2.25	.55
16 in.	33.00	2.75	2.25	.55
18 in.	33.00	3.25	2.50	.55
20 in.	45.00	3.50	2.75	.65
22 in.	45.00	4.00	3.00	.65
24 in.	45.00	4.25	3.00	.65
26 in.	45.00	5.25	3.00	.65
28 in.	70.00	7.00	3.50	.90
30 in.	70.00	8.00	3.50	.90
36 in.	70.00	11.50	4.50	1.00

[Refer to preceding page as page 10.]

All STEEL Independent 4-Jaw Chucks Reversible Jaws. Model 60



The heaviest work and most exacting demands are provided for in the unusual strength of this chuck, obtained by design of body, proportion of parts and quality of materials used. See page 7.

The wide jaws, exceptionally large screws, with double thrust bearings and ample bearing surfaces provide the greatest possible wearing qualities. Particular attention is invited to the height, length and width of jaws and the size of center hole. See page 8.

Quality of steel castings for the bodies is most important. We use a grade that is practically the equal of machinery steel and have never had one broken.

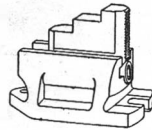
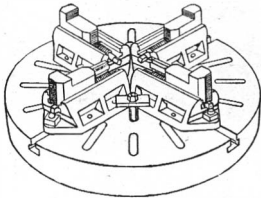
List Prices and Code Words, Model 60

Size, In.	List Price	Code Word	Hole Through Chuck	Diam. of Face Plate Recess	Approx. Weight. Pounds
8 in.	\$42.00	Danby	2 $\frac{1}{8}$	4 $\frac{3}{4}$	40
10 in.	50.00	Deck	2 $\frac{3}{4}$	6	55
12 in.	58.00	Delta	3 $\frac{1}{2}$	7 $\frac{1}{16}$	66
14 in.	67.00	Depew	3 $\frac{1}{2}$	7 $\frac{1}{16}$	90
16 in.	76.00	Dodge	4	7 $\frac{13}{16}$	125
18 in.	87.00	Dorloo	4 $\frac{1}{2}$	10	150
20 in.	100.00	Dover	4 $\frac{1}{2}$	10	200
22 in.	114.00	Duane	5	10	250
24 in.	130.00	Dugway	5	12	280
26 in.	150.00	Dundee	6 $\frac{1}{2}$	12	310
28 in.	175.00	Dunkirk	6 $\frac{3}{4}$	15	400
30 in.	200.00	Dunnal	7	15	510
36 in.	345.00	Durham	7 $\frac{1}{2}$	18	620

For dimensions, see page 8.

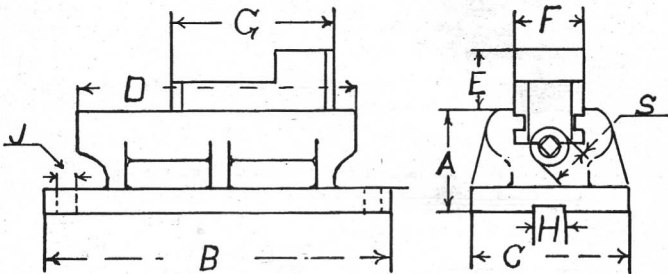
Attachment and Design of Horton Face-Plate Jaws

Model 56 Iron, and Model 58 STEEL



The Horton Face-Plate Jaws, in addition to the usual lugs at the ends, are designed with a wide base and pockets on the side into which clamping straps can enter for attaching to the face plate. The ends of these face-plate jaw bodies are pointed, allowing them to fit very close together at the center for holding small-diameter work. Sizes 4-inch and 6-inch are pointed at one end only. All larger sizes are pointed at both ends.

The screws have the well-known S. E. feature, extra large diameter, double thrust bearing, giving double area of thrust bearing in the body, and wide jaws.



Approximate Dimensions of HORTON Face-Plate Jaws, Models 56 and 58

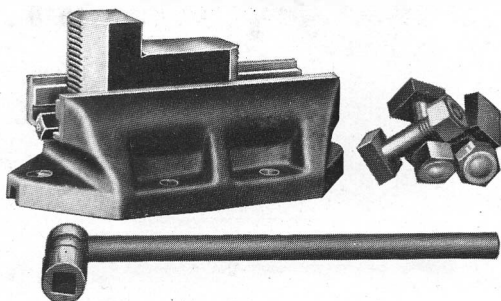
Size	A	B	C	D	E	*F	G	H	J	S	Approx. Wt. Set of 4	
											Iron	Steel
4 in.	2 1/8	6	4 5/8	4	2 1/8	*2 1/2	4	5/8	1 1/8	1 1/4	55	...
6 in.	3 3/8	8 1/4	5 1/2	6	2 1/2	*2 1/2	5	1	1 1/8	1 1/2	100	100
8 in.	3 1/2	10 1/8	6	8	2 1/8	*2 1/2	5	1	1 1/8	1 1/2	120	125
10 in.	3 3/4	13	6	10 1/2	2 1/4	2 1/2	6	1	1 1/8	1 1/2	225	195
12 in.	4 1/4	15 5/8	7	12	2 3/8	2 5/8	7	1	1 1/8	1 3/4	300	280
14 in.	4 3/4	18	7 1/2	14 1/2	2 3/8	2 5/8	7	1	1 1/8	1 3/4		420

* In 4", 6" and 8" sizes this dimension is width at base of jaw. These three sizes being same design as shown on page 8.

HORTON Face-Plate Jaws

Model 56 Iron Body, Model 58 STEEL Body

Reversible Sliding Jaws



Sizes are made from 4 in. to 14 in., suitable for face plates from 10 in. diameter up to the largest machines built. These jaws can be used interchangeably on different face plates. Much more complete provision for attaching is provided than in the older type — see opposite page for details and illustration showing advantages of the new designs. The operating screws all have double thrust bearings, and both screws and jaws are of larger and wider sections, as in the Model 60 independent chucks. A set of well finished square head bolts is furnished with each set of face-plate jaws.

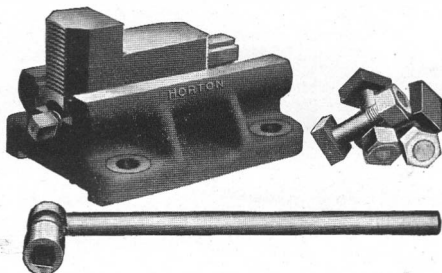
List Prices Iron Body Face-Plate Jaws. Model 56

Nom. Size corresponding to Length of Body	Approx. Wght. Set of Four	List Price, Set of Three Mod. 56	List Price, Set of Four Mod. 56	Code Word, Set of Three	Code Word, Set of Four
4 in.	34	\$30.00	\$40.00	Eaton	Elba
6 in.	100	39.00	52.00	Echo	Eldred
8 in.	120	48.00	64.00	Eden	Elma
10 in.	225	60.00	80.00	Edward	Empire
12 in.	300	84.00	112.00	Eggert	Erin

List Prices STEEL Body Face-Plate Jaws. Model 58

Nom. Size corresponding to Length of Body	Approx. Wght. Set of Four	List Price, Set of Three Mod. 58	List Price, Set of Four Mod. 58	Code Word, Set of Three	Code Word, Set of Four
6 in.	100	\$54.00	\$72.00	Eagle	Elmir
8 in.	125	69.00	92.00	Eapton	Elmont
10 in.	195	90.00	120.00	Earl	Etna
12 in.	280	120.00	160.00	Easton	Evans
14 in.	420	165.00	220.00	Eddy	Exeter

HORTON Boring-Mill Jaws Model 86 Iron Body, Model 88 STEEL Body Reversible Sliding Jaws



The boring-mill jaws regularly carried in stock have two parallel ribs 1 in. wide — spaced 6 in. center distance — which is the spacing of parallel slots in the tables of most boring mills.

Special forms of these boring-mill jaws, either for single slot or parallel slots of different spacing can be furnished.

The sliding jaws are made of extra length so as to largely cover the screw. A center bearing of the screw is always covered. Openings of good size through the side of the body, just above the base, are provided, which allow any dust or chips to work out from the pockets under the screw. Larger screws and bearings are used in the boring-mill jaws than in the corresponding sizes of face-plate jaws. These jaws can be used on very heavy or forge lathes when face plates are provided with suitable slots.

Price List Iron Body Boring-Mill Jaws. Model 86

Size corresponding to Length of Body	Approximate Weight per Set of Four	List Price, Set of Four, Model 86	Code Word
6 in.	150	\$68.00	Famine
8 in.	196	84.00	Flint
10 in.	248	108.00	Fonda

On sizes above 10" we recommend use of Steel Body.

Price List STEEL Body Boring-Mill Jaws. Model 88

Size corresponding to Length of Body	Approximate Weight per Set of Four	List Price, Set of Four, Model 88	Code Word
6 in.	136	\$112.00	Ferdon
8 in.	168	144.00	Fort
10 in.	232	184.00	Fraser
12 in.	272	240.00	Fuller
14 in.	382	300.00	Furman

Parts for Face-Plate Jaws. Models 56 and 58

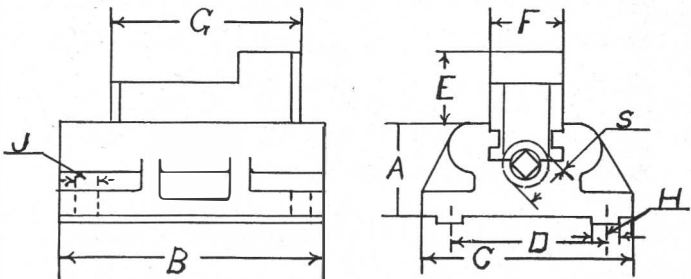
List Prices

Size, In.	Iron Body Model 56	Jaw, Each	Screw, Each	Wrench, Each
4 inch	\$7.00	\$4.50	\$2.50	\$2.00
6 inch	7.50	8.25	3.00	2.25
8 inch	8.50	8.25	4.00	2.75
10 inch	10.00	11.25	5.00	2.75
12 inch	14.00	17.50	6.00	3.75
14 inch		17.50	7.50	3.75

Parts for Boring-Mill Jaws. Models 86 and 88

List Prices

Size, In.	Iron Body Model 86	Jaw, Each	Screw, Each	Wrench, Each
6 inch	\$10.00	\$8.25	\$4.00	\$2.75
8 inch	12.00	11.25	5.00	2.75
10 inch	15.00	17.50	6.00	3.75
12 inch		17.50	7.50	3.75
14 inch		24.00	9.00	4.50



Approximate Dimensions of HORTON Boring-Mill Jaws. Models 86 and 88

Size, In.	A	B	C	D	E	F	G	H	J	S	Appx. Wt.—4	
											Iron	Steel
*6 in.	3 $\frac{3}{8}$	6 $\frac{1}{4}$	7 $\frac{3}{8}$	6	2 $\frac{5}{16}$	2 $\frac{1}{2}$	5	1	$\frac{29}{32}$	1 $\frac{1}{2}$	150	136
8 in.	3 $\frac{5}{8}$	8	8	6	2 $\frac{1}{4}$	2 $\frac{1}{2}$	6	1	$\frac{29}{32}$	1 $\frac{1}{2}$	196	168
10 in.	3 $\frac{1}{2}$	10	8	6	2 $\frac{5}{8}$	2 $\frac{5}{8}$	7	1	$\frac{29}{32}$	1 $\frac{3}{4}$	248	232
12 in.	3 $\frac{3}{4}$	12	8	6	2 $\frac{5}{8}$	2 $\frac{5}{8}$	7	1	$\frac{29}{32}$	1 $\frac{3}{4}$	330	272
14 in.	3 $\frac{3}{4}$	14	8 $\frac{1}{2}$	6	3 $\frac{5}{8}$	3	8	1	$\frac{29}{32}$	2 $\frac{1}{8}$		382

*In 6" size dimensions "F" is width at base of jaw, as shown on page 8.

We can furnish above boring-mill jaws, Models 86 and 88, with 1 inch wide ribs on bottom, 7 inches between centers, when so ordered.

HORTON Geared Scroll Chucks

The HORTON Geared Scroll Chucks are of the **Solid Body** pattern—the body being of double U section giving unusual stiffness. The Jaws are locked deeper into chuck body on ribs much wider than heretofore used.

The **Gearing** is much improved, having stronger tooth shapes specially designed for this line of chucks.

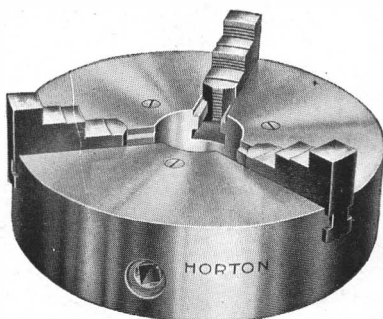
The Geared Scroll Chuck is well adapted for severe use and where the variety of work is such as to require different shapes of jaws. Scroll chuck jaws can be removed by simply running them out of the body, and the set that may be needed can then be as easily run in.

HORTON Scroll Chucks are carefully made to gauges so that at any time extra sets of finished jaws or blank soft jaws can be furnished which will interchange.

The proportions of these chucks have been carefully fixed after thorough study of requirements and they are exceptionally strong and accurate.

HORTON Geared Scroll Universal Chuck

No. 1 Jaws—Not Reversible



Model 31C, 3-Jaw

Model 41C, 4-Jaw

Common or No. 1 jaws are generally used for lathe work, and their holding capacity is equal to the diameter of body.

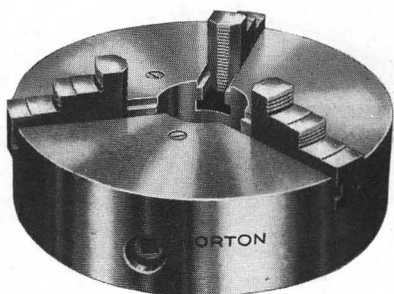
Extra sets of soft blank jaws can be furnished which may be readily shaped to fit the work or turned true for extreme accuracy.

Nominal Size, Inches	Three-Jaw, Model 31C		Four-Jaw, Model 41C	
	List Price	Code Word	List Price	Code Word
3 in.	\$17.00	Gage		
4 in.	19.00	Gaines	\$21.00	Garnet
5 in.	21.00	Gale	23.00	Garske
6 in.	24.00	Galion	27.00	Garvin
7½ in.	27.00	Gallit	30.00	Gary
9 in.	33.00	Gallup	36.00	Garza
10½ in.	38.00	Galway	42.00	Gates
12 in.	45.00	Ganges	50.00	Gath
15 in.	60.00	Gap	65.00	Gayhed
18 in.	80.00	Gapson	87.00	Geddes
21 in.	105.00	Gardar	115.00	Gelatt
24 in.	140.00	Garden	150.00	Geneva

For dimensions and parts price list see page 22.

HORTON Geared Scroll Universal Chuck

No. 2 Jaws—Not Reversible



Model 32C, 3-Jaw

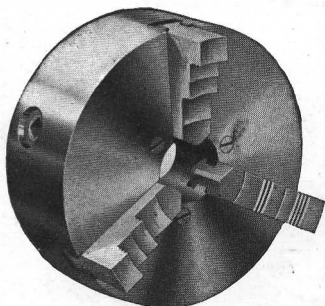
Model 42C, 4-Jaw

Jaws of this style are adapted for holding bars, rods and drills. Steps on outside are used to hold rings, while finishing on outside of work.

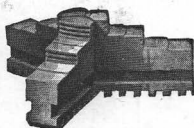
Nominal Size, Inches	Three-Jaw, Model 32C		Four-Jaw, Model 42C	
	List Price	Code Word	List Price	Code Word
3 in.	\$17.00	Genoa		
4 in.	19.00	Gentry	\$21.00	Gilby
5 in.	21.00	George	23.00	Gile
6 in.	24.00	Gerry	27.00	Giles
7½ in.	27.00	Gertru	30.00	Gill
9 in.	33.00	Getty	36.00	Gingam
10½ in.	38.00	Geyer	42.00	Girard
12 in.	45.00	Ghent	50.00	Girty
15 in.	60.00	Gibson	65.00	Gladys
18 in.	80.00	Giffor	87.00	Glasco
21 in.	105.00	Gilber	115.00	Glass
24 in.	140.00	Gilboa	150.00	Glen

For dimensions and parts price list see page 22.

Geared Scroll Universal Chuck with No. 1 and No. 2 Jaws



Model 34C, 3-Jaw.



Model 44C, 4-Jaw.

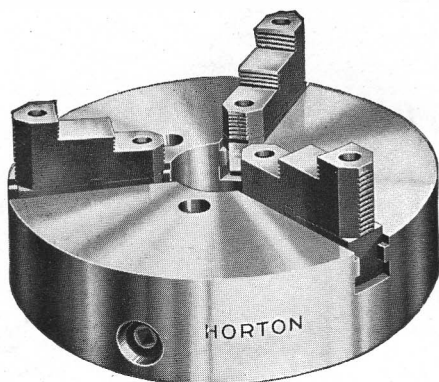
It is a simple matter to change a scroll chuck from one set of jaws to a set of different style, and we regularly carry the largest stock of scroll chucks with the two sets of jaws shown and advise the ordering of scroll chucks in this model.

If on receipt, or delivery, of the chuck it is found that only one set of jaws is required, we will accept the return of the set which may not be needed.

Nominal Size, Inches	Three-Jaw, Model 34C		Four-Jaw, Model 44C	
	List Price	Code Word	List Price	Code Word
3 in.	\$20.00	Glenam		
4 in.	22.00	Glenory	\$24.00	Grace
5 in.	24.00	Glover	27.00	Grand
6 in.	28.00	Glynn	31.00	Grant
7½ in.	32.00	Gober	36.00	Grave
9 in.	38.00	Gold	42.00	Gravel
10½ in.	44.00	Golden	49.00	Gravit
12 in.	52.00	Goldth	58.00	Gray
15 in.	70.00	Goliad	76.00	Greece
18 in.	92.00	Gooby	102.00	Green
21 in.	120.00	Gorman	135.00	Gresh
24 in.	155.00	Gould	170.00	Griggs

For dimensions and parts price list see page 22.

Geared Scroll Universal Chuck with Reversible Top Jaws Iron and Steel Body



Model 36C, 3-Jaw, Iron. Model 46C, 4-Jaw, Iron.
Model S36, 3-Jaw, Steel.

For certain requirements, especially on the larger sizes of scroll chucks for turret lathe work, the type of Reversible Top Jaw shown above may be of advantage.

The design of this Reversible Jaw includes a square key of liberal size which key takes the end or gripping thrust. On the larger sizes specially heavy attaching screws are furnished.

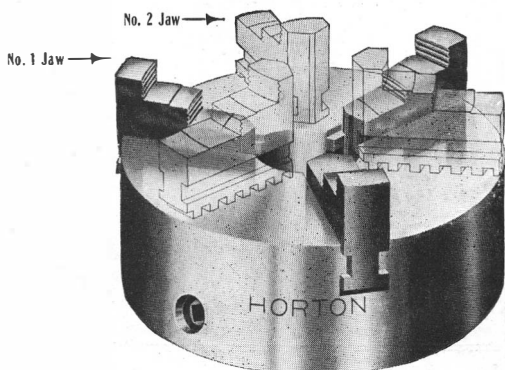
Extra sets of Soft Blank Top Jaws can be furnished for attachment to Jaw Base. These blanks can be readily machined to special shapes if needed.

LIST PRICES

Nominal Size. Inches	3-Jaw, Iron Body Model 36 C		4-Jaw, Iron Body Model 46 C		3-Jaw, Steel Body Model S36	
	Price	Code	Price	Code	Price	Code
9 in.	\$36.00	Greeg	\$40.00	Groho	\$50.00	Grubar
10½ in.	41.00	Greer	46 00	Groma	57.00	Grubno
12 in.	49.00	Gret	54.00	Grond	68.00	Gruen
15 in.	64.00	Grill	70.00	Groton	89.00	Gruffi
18 in.	85.00	Grimes	95.00	Grove	119.00	Grumet
21 in.	112.00	Groff	125.00	Guild	157.00	Grupen
24 in.	147.00	Grogan	160.00	Gutman	207.00	Grusso

For dimensions and parts price list see page 22.

HORTON STEEL Body Universal Geared Scroll Chucks. 3 Jaws



The Horton STEEL Body Scroll Chucks have the body casting of genuine steel of at least 70,000 lbs. tensile strength, which gives the maximum strength in a minimum size. The gearing is exceptionally heavy and all parts are of great strength. The size of square in pinion is larger than usual, and long heavy wrenches are furnished. These chucks are intended for the most severe duty, and in every detail the design and construction is carried out with special consideration of these requirements.

With No. 1 Jaws, Model S 31; No. 2 Jaws, Model S 32.
 With two sets (No. 1 and No. 2 Jaws), Model S 34.

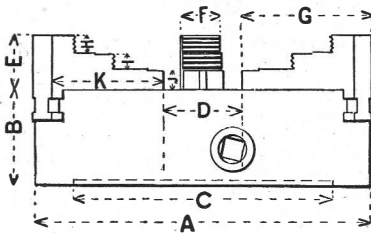
Steel Body LIST PRICES Three-Jaw

Nominal Size, Inches	Model S 31 1 Set—No. 1 Jaws		Model S 32 1 Set—No. 2 Jaws		Model S 34 2 Sets—Nos. 1 and 2 Jaws	
	Price	Code	Price	Code	Price	Code
4 in.	\$27.00	Sabine	\$27.00	Shaft	\$30.00	Sodus
5 in.	30.00	Sack	30.00	Shanda	33.00	Sofia
6 in.	34.00	Saga	34.00	Shap	38.00	Solo
7½ in.	38.00	Salus	38.00	Shaver	43.00	Solvay
9 in.	47.00	Salmon	47.00	Shelby	52.00	Sorens
10½ in.	54.00	Salter	54.00	Shirly	60.00	South
12 in.	64.00	Sambro	64.00	Shoal	71.00	Spark
15 in.	85.00	Sandus	85.00	Shorem	95.00	Spence
18 in.	114.00	Santa	114.00	Shrove	126.00	Spezi
21 in.	150.00	Sarah	150.00	Shrubo	165.00	Spray
24 in.	200.00	Saska	200.00	Shuhan	215.00	Spring

For dimensions and parts price list see page 22.

List Prices of Parts for Scroll Universal Chucks

Rated Size	Iron Body	Jaws, Three	Scroll	Pinion Each	Wrench	Bolts Each	Mod. 36 C Rev. Jaws	
							Complete Jaws Three	Soft Blank Tops-3
3 in.	\$8.00	\$5.25	\$3.00	\$1.00	\$1.25	\$0.25		
4 in.	9.00	6.00	4.00	1.25	1.25	.30		
5 in.	9.50	6.75	5.00	1.50	1.50	.35		
6 in.	10.00	7.50	6.00	1.75	1.75	.40		
7½ in.	12.00	9.00	7.50	2.00	1.75	.40		
9 in.	15.00	10.50	10.00	2.25	2.00	.45	\$21.00	\$10.50
10½ in.	18.00	13.50	13.50	2.50	2.00	.45	24.00	12.00
12 in.	21.00	13.50	18.00	3.00	2.25	.50	24.00	12.00
15 in.	30.00	21.00	24.00	3.75	2.25	.60	36.00	18.00
18 in.	42.00	21.00	30.00	4.50	2.75	.65	36.00	18.00
21 in.	55.00	30.00	40.00	6.00	3.25	.65	52.00	26.00
24 in.	75.00	30.00	60.00	7.50	3.25	.65	52.00	26.00



**Dimensions of
HORTON
Geared Scroll
Universal
Chucks**

In.	A	B	C	D	E	F	G	Approx. Wt.
3 in.	3¼	1⅝	2⅛	¾	⅞	⅞	1¼	3½
4 in.	4⅜	2¼	3⅛	1	⅞	⅝	1⅛	9
5 in.	5¼	2⅝	3¾	1⅛	⅞	⅝	2⅛	10½
6 in.	6⅝	2⅞	4¾	1½	1¼	⅞	2⅜	20
7½ in.	7⅝	2⅞	6	2	1¼	⅞	2⅞	28
9 in.	9⅜	3	7	2⅝	1½	⅞	3⅜	48
10½ in.	10½	3⅜	7	3	1⅞	⅞	3⅞	68
12 in.	12⅝	3⅞	7	3	1⅞	⅞	3⅞	90
15 in.	15¼	3⅞	8	3½	2⅜	⅞	5⅜	172
18 in.	18	4¼	10	4	2⅜	⅞	5⅜	200
21 in.	21	4⅝	11	4½	2⅞	1⅞	6⅞	360
24 in.	24	4⅞	12	5	2⅞	1⅞	6⅞	410

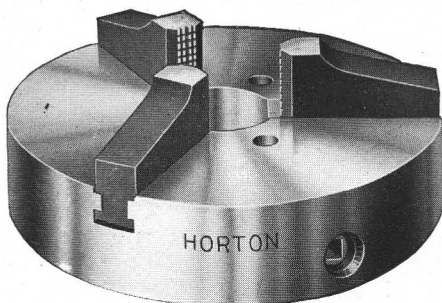
HORTON Heavy Duty Geared Scroll Chucks

For BAR and FORGING Work

With Either STEEL or Regular Iron Body

These chucks have the same distinctive HORTON improvements as the scroll chucks on preceding pages.

In these Heavy Duty chucks, however, both the Scrolls and Pinions are **Heat-Treated and Oil-Hardened** in all the sizes up to and including 18 in. On the two largest sizes a special treatment of forging is secured before machining the scroll, the pinions, however, being hardened all over.



All Bearings are Hardened and Ground.

The Outer End of Pinions are of large diameter, giving ample strength for use of long, heavy wrenches. Note the length of wrench handles regularly furnished.

Rated Size In.	Diam. In.	Thk. In.	Diam. Recess In.	Dia. of Center Hole In.	Height of Jaw In.	Lgth. of Jaw In.	Lgth. Wre'ch In.
10½	10½	3¼	7	3 or 3½	1⅞	4	12
12	12½	3⅞	7	3 " 4	1⅞	4	15
15	15¼	3⅞	8	3½ " 5¼	2⅜	5½	19
18	18	4⅞	10	4 " 5¾	2⅜	5½	21
21	21	4⅞	11	4½ " 7	2⅞	7	24
24	24	4⅞	12	5 " 8	2⅞	7	24

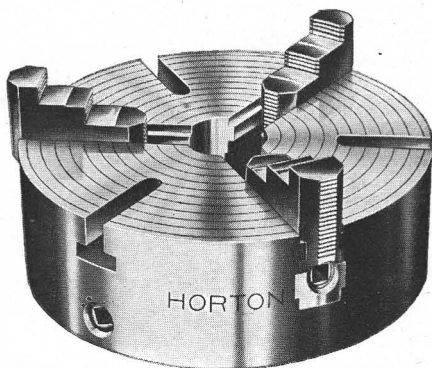
· 91 C Iron Body

Rated Size	Price	Code Word	Hole thru Chuck	Diam. Face Plate	Weight
10½ in.	\$45.00	Dais	3 or 3½	7	58 lbs.
12 in.	54.00	Dandy	3 " 4	7	86 lbs.
15 in.	72.00	Dapper	3½ " 5¼	8	156 lbs.
18 in.	96.00	Dare	4 " 5¾	10	183 lbs.
21 in.	126.00	Dash	4½ " 7	11	330 lbs.
24 in.	165.00	Daunt	5 " 8	12	410 lbs.

S 91 Steel Chuck

Rated Size	Price	Code Word	Hole thru Chuck	Diam. Face Plate	Weight
10½ in.	\$63.00	Eager	3 or 3½	7	58
12 in.	75.00	Eclat	3 " 4	7	86
15 in.	99.00	Eclipse	3½ " 5¼	8	156
18 in.	129.00	Effort	4 " 5¾	10	183
21 in.	171.00	Elate	4½ " 7	11	330
24 in.	213.00	Endure	5 " 8	12	430

HORTON Combination Geared Scroll Chucks with Solid Reversible Jaws.



Model 183, 3-Jaw.

Model 184, 4-Jaw.

This Scroll Combination Chuck is designed to handle the hardest and heaviest cuts and is the equal in strength to our new lines of Four-Jaw Independent Chucks and Universal Scroll Chucks. It is without any exception the strongest and most durable Combination Chuck made.

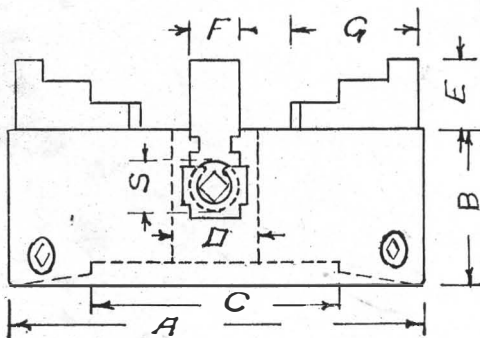
The Independent Adjusting Screws have the distinctive Horton features of large diameters, large thrust area and protection from chips. These screws are **Self-Contained** in the scroll jaw and have no necks or reduced sections. The large diameter screws having the same square as the scroll pinion only one operating wrench is required.

LIST PRICES

Nominal Size Inches	Three-Jaw, Model 183		Four-Jaw, Model 184	
	List Price	Code Word	List Price	Code Word
9 in.	\$60.00	Tampa	\$70.00	Token
10½ in.	70.00	Tatro	80.00	Tonic
12 in.	80.00	Tekoa	95.00	Tough
15 in.	106.00	Terry	120.00	Trion
18 in.	132.00	Texas	155.00	Tyler
21 in.	168.00	Tioga		

Approximate Dimensions of Scroll Combination Chucks.

Models 183-184



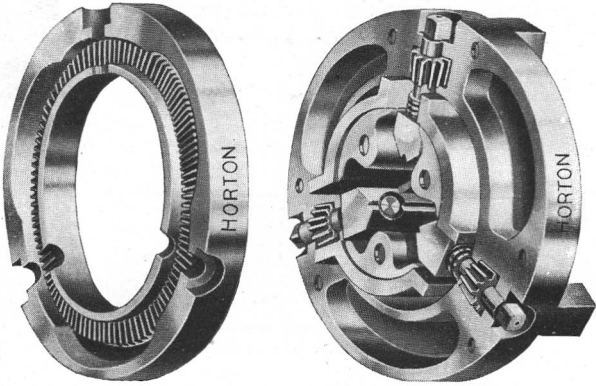
Size	A	B	C	D	E	F	G	S	Aprox. Weight
9 in.	9 ³ / ₈	4 ⁵ / ₁₆	7"	2 ³ / ₈	1 ³ / ₄	1 ³ / ₁₆	3 ³ / ₈	1 ¹ / ₄	68
10 ¹ / ₂ in.	10 ¹ / ₂	4 ⁷ / ₁₆	7	3	1 ³ / ₄	1 ³ / ₁₆	3 ³ / ₈	1 ¹ / ₄	80
12 in.	12 ³ / ₈	4 ¹⁵ / ₁₆	7	3 ¹ / ₄	2 ¹ / ₁₆	1 ⁹ / ₁₆	4 ³ / ₄	1 ⁷ / ₁₆	125
15 in.	15 ¹ / ₄	5 ⁹ / ₁₆	8	3 ¹ / ₂	2 ¹ / ₁₆	1 ⁹ / ₁₆	4 ³ / ₄	1 ⁷ / ₁₆	179
18 in.	18	6 ¹ / ₄	10	4	2 ¹ / ₂	1 ⁷ / ₈	6	1 ³ / ₄	308
21 in.	21	6 ⁹ / ₁₆	11	4 ¹ / ₂	2 ¹ / ₂	1 ⁷ / ₈	6	1 ³ / ₄	400
24 in.	24	6 ⁹ / ₁₆	12	5	2 ¹ / ₂	1 ⁷ / ₈	6	1 ³ / ₄	500

List Price of Parts for Geared Scroll Combination Chucks

Size	Shells	Top Jaws, Set of Three	Bottom Jaws or Screw Carriers, Set of Three
9 inches	\$18.00	\$12.00	\$24.00
10 ¹ / ₂ inches	22.00	12.00	24.00
12 inches	28.00	18.00	32.00
15 inches	35.00	18.00	32.00
18 inches	48.00	27.00	45.00
21 inches	65.00	27.00	45.00
24 inches	90.00	27.00	45.00

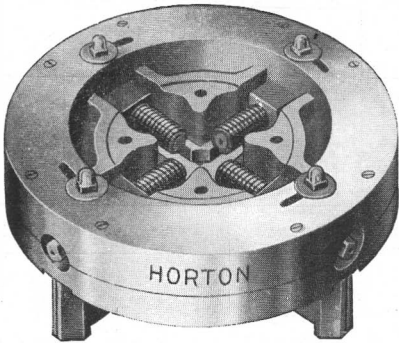
Size	Ind. Screws	Scroll	Pinion, Each
9 inches	\$1.50	\$10.00	\$2.25
10 ¹ / ₂ inches	1.50	13.50	2.50
12 inches	1.75	18.00	3.00
15 inches	1.75	24.00	3.75
18 inches	2.25	30.00	4.50
21 inches	2.25	40.00	6.00
24 inches	2.25	60.00	7.50

Design of HORTON Universal Lathe Chucks



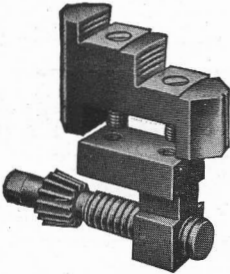
The HORTON Universal Lathe Chuck shown on this page was the invention of Eli HORTON, the founder of E. HORTON & Son Co., and was patented in 1851. The jaws are moved simultaneously by means of geared or pinion screws and the circular rack of steel which is enclosed in the deep groove of the back plate. The front and back plates make a tight casing for the gearing, which prevents dirt or chips from clogging or injuring the gearing.

A **Combination Chuck** is designed so as to be operated ordinarily as a Universal, but when thrown out of gear can be used as an Independent Chuck.



Back View of HORTON Combination Chuck

The **Reversible Jaw** shown below is the nearest approach to a solid jaw. The square base gives large shoulders to receive the thrust, and there is a minimum of dependence on the screws. One of the great advantages of this design is the fact that there is a continuous bite at either end and therefore no possibility of a poor bite, owing to different parts becoming unequally worn as is the case with any form which depends on the bite being partly on both the top and bottom part of jaw.



Reversible Jaw

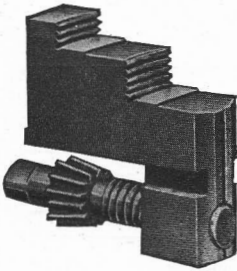
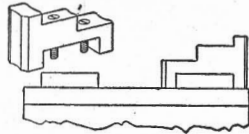
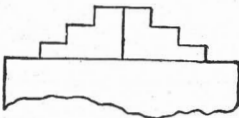
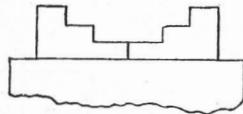
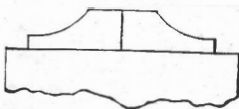


Illustration and diagram show the **Common Jaw** with the Improved Horton Raised Seat. This improved jaw was patented in August, 1873. Common jaws can be furnished for any style of Universal or Combination Chuck.



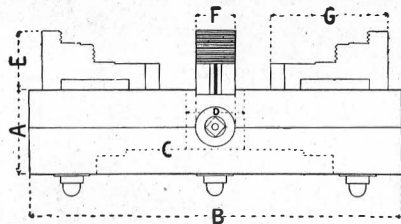
This diagram shows HORTON Chuck with **Outside Bites**. These are regularly kept in stock in all the smaller sizes.



This diagram shows HORTON **Inside Jaw** Chuck. Refer to pages 35 and 36 for lists and Model numbers of this type.

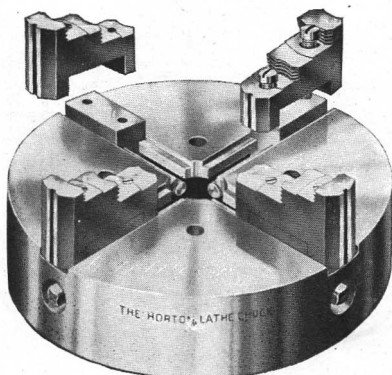
Approximate Dimensions of Horton Combination and Universal Chuck

Models 63-64, 73-74, 163-164, 173-174



Rated Size	A Comb.	A Univ.	B	C	D Dia. Hole	E Rev. Jaw	E Solid Jaw	F	G Rev. Jaw	G Solid Jaw	3-Jaw Approx. Net Weight	4-Jaw Net Weight
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	Lbs.	Lbs.
4 in.	1 $\frac{7}{8}$	1 $\frac{5}{8}$	5 $\frac{3}{8}$	2 $\frac{5}{8}$	1	1 $\frac{3}{8}$	1 $\frac{3}{8}$	1 $\frac{13}{16}$	2	2 $\frac{1}{16}$	9	
5 in.	2 $\frac{1}{16}$	1 $\frac{3}{4}$	6 $\frac{13}{16}$	3 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{7}{8}$	1 $\frac{5}{8}$	1 $\frac{13}{16}$	2 $\frac{7}{8}$	2 $\frac{5}{8}$	14	15
6 in.	2 $\frac{3}{16}$	1 $\frac{7}{8}$	7 $\frac{3}{4}$	3 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{7}{8}$	1 $\frac{5}{8}$	1 $\frac{13}{16}$	3 $\frac{1}{8}$	2 $\frac{5}{8}$	18	20
8 in.	2 $\frac{7}{16}$	2 $\frac{1}{16}$	9 $\frac{1}{4}$	4 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{3}{16}$	1 $\frac{11}{16}$	1 $\frac{3}{8}$	3 $\frac{3}{4}$	3 $\frac{9}{16}$	32	35
9 in.	2 $\frac{5}{8}$	2 $\frac{1}{16}$	10 $\frac{5}{16}$	5	1 $\frac{1}{2}$	1 $\frac{7}{8}$	1 $\frac{5}{8}$	1 $\frac{3}{8}$	3 $\frac{5}{8}$	3 $\frac{1}{4}$	34	36
12 in.	2 $\frac{13}{16}$	2 $\frac{7}{16}$	13 $\frac{1}{8}$	5 $\frac{11}{16}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	1 $\frac{1}{16}$	3 $\frac{13}{16}$	3 $\frac{3}{4}$	55	59
15 in.	3 $\frac{1}{16}$	3 $\frac{1}{16}$	15 $\frac{9}{16}$	7	2 $\frac{1}{8}$	2 $\frac{7}{16}$	1 $\frac{9}{16}$	1 $\frac{5}{16}$	4 $\frac{13}{16}$	4 $\frac{11}{16}$	86	92
18 in.	3 $\frac{3}{16}$	3 $\frac{3}{16}$	17 $\frac{13}{16}$	7	2 $\frac{1}{8}$	3	2 $\frac{3}{8}$	1 $\frac{7}{16}$	5 $\frac{3}{4}$	5 $\frac{5}{8}$	106	114
21 in.	3 $\frac{3}{16}$	3 $\frac{3}{16}$	20 $\frac{13}{16}$	8 $\frac{1}{8}$	2 $\frac{1}{4}$	3	2 $\frac{1}{2}$	1 $\frac{7}{16}$	5 $\frac{3}{4}$	6	139	143
24 in.	3 $\frac{9}{16}$	3 $\frac{9}{16}$	24	12	2 $\frac{5}{8}$	3	2 $\frac{7}{8}$	1 $\frac{1}{2}$	6 $\frac{1}{8}$	6 $\frac{1}{4}$	215	222
26 in.	3 $\frac{9}{16}$	3 $\frac{9}{16}$	26 $\frac{1}{4}$	12	3 $\frac{1}{8}$	3 $\frac{3}{16}$	3 $\frac{1}{2}$	1 $\frac{3}{4}$	7	7	330	342
30 in.	4 $\frac{1}{2}$	4 $\frac{1}{2}$	30	15	3 $\frac{3}{8}$	4 $\frac{1}{16}$	5	2	8 $\frac{5}{8}$	8 $\frac{1}{4}$	475	480
36 in.	4 $\frac{1}{2}$	4 $\frac{1}{2}$	36 $\frac{7}{8}$	18	5	5 $\frac{5}{8}$	4 $\frac{3}{4}$	2	10	9 $\frac{3}{4}$	675	690

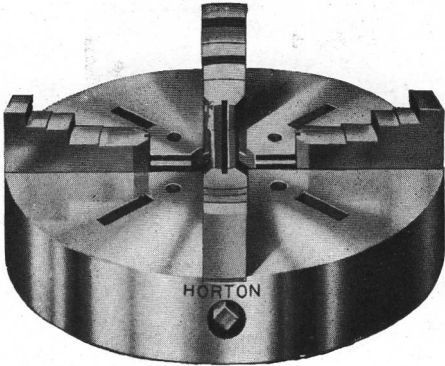
HORTON Combination Chuck with Reversible Jaws. Models 63-64



Size, In.	Model 63, 3-Jaw		Model 64, 4-Jaw	
	List Price	Code Word	List Price	Code Word
4 in.	\$29.00	Halbot		
5 in.	32.00	Hardy	\$39.00	Hibern
6 in.	35.00	Harper	42.00	Hilton
8 in.	42.00	Harris	50.00	Hinman
9 in.	45.00	Harry	54.00	Holley
12 in.	56.00	Hasting	66.00	Hollis
15 in.	70.00	Hawley	82.00	Hornby
18 in.	87.00	Haynes	102.00	Howard
21 in.	110.00	Hazel	130.00	Hudson
24 in.	136.00	Hecla	160.00	Hurley
26 in.	160.00	Helena	192.00	Hunt
30 in.	200.00	Helmar	240.00	Huron
36 in.	264.00	Henpin	325.00	Hyde

For dimensions, see page 28. Parts price list page 32.

HORTON Combination Chuck with Common Jaws. Models 163-164



Model 163, 3-Jaw.

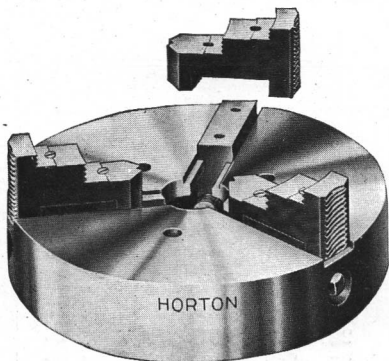
Model 164, 4-Jaw.

This chuck can also be furnished with outside-bite jaws, as shown on page 27.

Size, In.	Model 163, 3-Jaw		Model 164, 4-Jaw	
	List Price	Code Word	List Price	Code Word
4 in.	\$29.00	Idamar		
5 in.	32.00	Iles	\$39.00	Ira
6 in.	35.00	Ilion	42.00	Irene
8 in.	42.00	Imler	50.00	Irish
9 in.	45.00	Imlip	54.00	Irving
12 in.	56.00	Index	66.00	Irwin
15 in.	70.00	Indian	82.00	Isle
18 in.	87.00	Inland	102.00	Isleta
21 in.	110.00	Inlet	130.00	Islip
24 in.	136.00	Innic	160.00	Itaska
26 in.	160.00	Inshor	192.00	Ithaca
30 in.	200.00	Intern	240.00	Ivan
36 in.	264.00	Inwood	325.00	Ivory

For dimensions, see page 28. Parts price list page 32.

HORTON Universal Reversible Jaw Chuck Models 73-74



Model 73, 3-Jaw.

Model 74, 4-Jaw.

A Geared Screw Universal Chuck used with proper care will stand very long continuous service and still do accurate work. It is perfectly practical to fit such a chuck with our reversible jaws without sacrificing accuracy, as the reversible tops are fitted to the lower jaws on broad, hardened surfaces, with square shoulders, to take the thrust and wear. The bites or gripping surfaces at either end of jaw are continuous the whole height of jaw, which is a distinct advantage found only in this design.

Size, In.	Model 73, 3-Jaw		Model 74, 4-Jaw	
	List Price	Code Word	List Price	Code Word
4 in.	\$27.00	Jacob		
5 in.	30.00	James	\$37.00	Jester
6 in.	32.00	Jane	39.00	Jewell
8 in.	38.00	Jasper	46.00	Jolly
9 in.	41.00	Java	50.00	Joppa
12 in.	49.00	Jay	59.00	Jordan
15 in.	60.00	Jeffer	72.00	Jornal
18 in.	75.00	Jelly	90.00	Judson
21 in.	96.00	Jenera	116.00	Jumba
24 in.	120.00	Jenks	144.00	Jump
26 in.	145.00	Jerome	177.00	Junior
30 in.	180.00	Jerry	220.00	Junius
36 in.	235.00	Jessie	296.00	Justus

For dimensions, see page 28. Parts price list page 32.

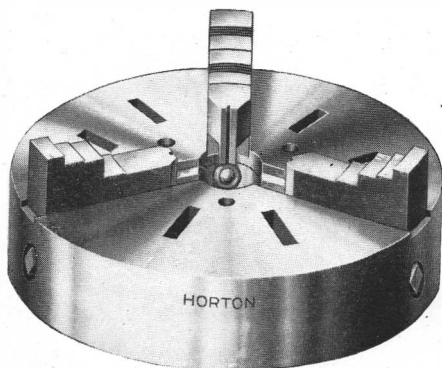
**Parts for Combination and Universal Chucks,
Models 63, 64, 71, 72, 73, 74, 163, 164, 173, 174**

List Prices

Size	Body	Jaws, Set of Three	Pinion Screw, Each	Circular Rack
3 in.	\$10.00	\$14.00	\$1.60	\$1.60
4 in.	11.00	16.00	1.75	2.00
5 in.	12.50	18.00	1.80	2.25
6 in.	13.50	19.50	2.00	2.50
8 in.	15.00	22.50	2.50	3.00
9 in.	17.00	24.00	2.75	3.25
12 in.	22.00	27.00	3.25	4.25
15 in.	27.00	31.50	4.00	5.50
18 in.	37.00	39.00	4.75	6.00
21 in.	50.00	48.00	6.00	7.50
24 in.	68.00	57.00	7.00	10.00
26 in.	88.00	69.00	8.00	12.50
30 in.	110.00	84.00	12.00	16.00
36 in.	160.00	102.00	15.00	20.00

Size	Cam Ring	Wrench	Bolt with Nuts, Each
3 in.	\$1.60	\$0.80	\$0.20
4 in.	2.00	1.10	.20
5 in.	2.25	1.10	.20
6 in.	2.50	1.10	.30
8 in.	3.00	1.20	.35
9 in.	3.25	1.20	.35
12 in.	4.25	1.20	.45
15 in.	5.50	1.80	.45
18 in.	6.00	2.50	.60
21 in.	7.50	2.50	.60
24 in.	10.00	2.50	.60
26 in.	12.50	2.80	.80
30 in.	16.00	3.90	.90
36 in.	20.00	3.90	.90

HORTON Universal Common Jaw Chuck Model 173-174



• Model 173, 3-Jaw.

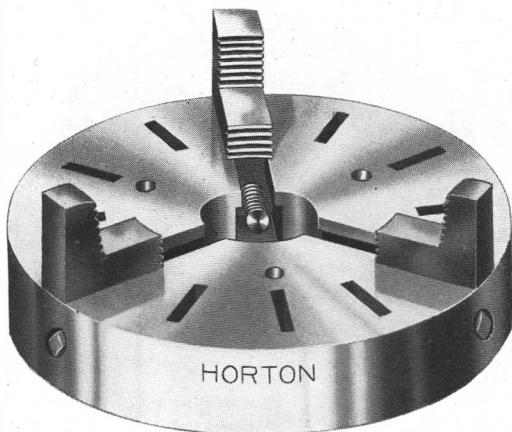
Model 174, 4-Jaw.

The HORTON Geared Screw Chuck is well known as the most accurate type of universal chuck. These chucks are made within closer limits of accuracy through the range of capacity, and they will maintain this accuracy throughout a longer period of severe use than any other type. They are also more quickly adjusted for a widely varying range of sizes. They do not tend to clog up with dirt or chips, as the gearing is entirely enclosed and the screws operate in a full nut.

Size, In.	Model 173, 3-Jaw		Model 174, 4-Jaw	
	List Price	Code Word	List Price	Code Word
4 in.	\$27.00	Ladle		
5 in.	30.00	Laird	\$37.00	Linden
6 in.	32.00	Lane	39.00	Lisbon
8 in.	38.00	Laona	46.00	Lisle
9 in.	41.00	Lark	50.00	Locke
12 in.	49.00	Larry	59.00	Locust
15 in.	60.00	Laurel	72.00	Lodi
18 in.	75.00	Lawton	90.00	Logan
21 in.	96.00	Lenox	116.00	Lord
24 in.	120.00	Leon	144.00	Lowell
26 in.	145.00	Levant	177.00	Lowman
30 in.	180.00	Lewis	220.00	Loyal
36 in.	235.00	Lily	296.00	Ludlow

This chuck can also be furnished with outside-bite jaws—see page 27. For dimensions, see page 28.

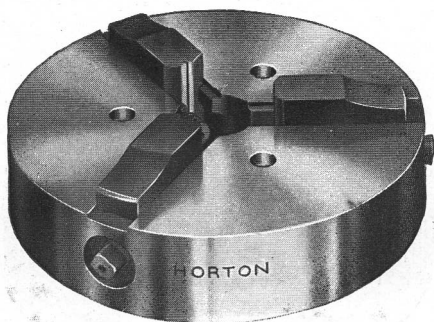
HORTON Car-Wheel Chucks



HORTON Car-Wheel Chucks are made in several different patterns — from 24 in. to 42 in. in diameter — the 36 in. and 42 in. sizes either 3-jaw or 6-jaw. We have furnished chucks for several special car-wheel boring — and grinding — machines and in former catalogs we have illustrated several of these patterns and can furnish the Bouton-HORTON car-wheel chuck with clamp jaw, etc. The ordinary types can generally be furnished from stock; special forms of car-wheel chucks can be assembled promptly.

	List Price	Code Word
24 in. Car-Wheel Chuck, Three Jaws	\$140.00	Karey
26 in. Car-Wheel Chuck, Three Jaws	175.00	Karner
30 in. Car-Wheel Chuck, Three Jaws	220.00	Kast
36 in. Car-Wheel Chuck, Three Jaws	280.00	Katon
36 in. Car-Wheel Chuck, Six Jaws	390.00	Katt
42 in. Car-Wheel Chuck, Three Jaws	350.00	Kattel
42 in. Car-Wheel Chuck, Six Jaws	450.00	Kavit

HORTON Milling Machine Chuck, or Inside Jaw Universal Chuck. Model 72



This chuck is designed for use on universal milling machines and we pay particular attention to its accuracy.

We have furnished chucks for practically all the standard makes of milling machines and can generally furnish from stock chucks fitted for any make or size.

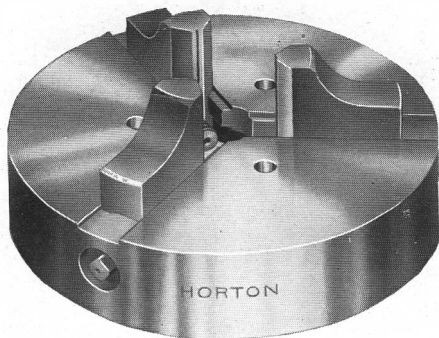
This chuck is also well adapted for holding rod work or tools with shanks which can be passed through the chuck.

List Prices and Dimensions of Model 72

Size	List Price	Diam. Face-Plate Recess	Diam. Hole	Approx. Capacity	Code Word
3 in.	\$24.00	1 $\frac{15}{16}$	$\frac{3}{4}$	$\frac{3}{4}$	Mackey
4 in.	27.00	2 $\frac{7}{16}$	$\frac{7}{8}$	1	Magee
5 in.	30.00	3 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{5}{8}$	Malta
6 in.	32.00	3 $\frac{1}{2}$	1 $\frac{1}{4}$	2 $\frac{1}{8}$	Mann
8 in.	38.00	4 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{5}{8}$	Maple
9 in.	41.00	5	1 $\frac{1}{2}$	4 $\frac{1}{16}$	Marcy
12 in.	49.00	5 $\frac{11}{16}$	1 $\frac{3}{4}$	6	Martin
15 in.	60.00	7	2 $\frac{1}{8}$	7	Mason

Can furnish 6 in. size with 4 in. diameter face-plate recess, or 8 in. size with 5 in. diameter face-plate recess.

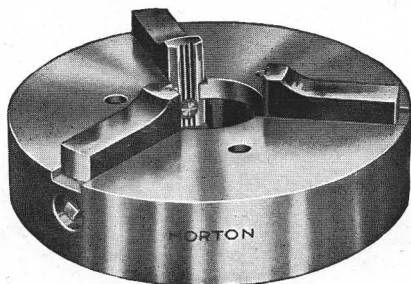
HORTON Universal Inside Jaw Chuck Model 71, Three-Jaw



For rod work or for pieces having a hub of not too great diameter and where the bite must be carried out from the face of chuck, the higher form of jaw shown above may be very useful. We make Universal chucks in this style from 3 in. up. In the smallest sizes these chucks are sometimes used as drill chucks, where they prove very powerful and accurate. Can be made 4-Jaw if required.

Size Chuck	Diam. of Face-Plate Recess	Diam. of Hole through Chuck	Size Jaws will hold	List Price, 3-Jaw	Code Word
3 in.	$1\frac{15}{16}$	$\frac{3}{4}$	$\frac{3}{4}$	\$24.00	Napan
4 in.	$2\frac{7}{16}$	$\frac{7}{8}$	1	27.00	Naples
5 in.	$3\frac{1}{2}$	$1\frac{1}{4}$	$1\frac{5}{8}$	30.00	Napoli
6 in.	$3\frac{1}{2}$	$1\frac{1}{4}$	$2\frac{1}{8}$	32.00	Narrow
8 in.	$4\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{5}{8}$	38.00	Nelson
9 in.	5	$1\frac{1}{2}$	$4\frac{1}{16}$	41.00	Nepera
12 in.	$5\frac{11}{16}$	$1\frac{3}{4}$	6	49.00	Nevis
15 in.	7	$2\frac{1}{8}$	7	60.00	Nixon

HORTON Universal Chuck for Cutting-Off Lathe. Model 83



This style of chuck is especially designed for use on cutting-off machines — for holding either round, square or hexagon bar stock — the bite of jaws extends on both sides of the operating or pinion screws, which results in a stronger and more rigid grip than can be obtained with any other universal chuck. The size of screws and width of sliding ways are increased to correspond to the heavy duty required by this work. All these chucks except those marked * will fit the Hurlbut-Rogers Machine.

Rated Size	Center Hole	Recess for Face Plate	List Price, 3-Jaw, Model 83	Code Word
8 in.	2 $\frac{1}{8}$ in.	5 in.	\$34.00	Palver
* 9 in.	2 $\frac{9}{16}$ in.	5 $\frac{5}{8}$ in.	38.00	Pansy
12 in.	3 $\frac{1}{8}$ in.	7 $\frac{1}{4}$ in.	50.00	Parr
*14 in.	4 $\frac{5}{8}$ in.	8 $\frac{1}{2}$ in.	63.00	Patril
14 in.	4 $\frac{1}{8}$ in.	8 $\frac{1}{2}$ in.	63.00	Patsy
17 in.	5 $\frac{1}{8}$ in.	11 in.	78.00	Penn
20 in.	6 $\frac{1}{2}$ in.	12 in.	90.00	Pennsy

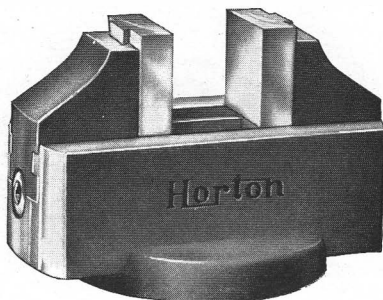
* Formerly used on Pratt & Whitney Machine.

*Model 93

*The above chucks are made and kept in stock with low jaws the same as Milling Machine chucks, shown on page 35.

HORTON TWO-JAW CHUCKS

Independent and Universal—Box Body



The requirements for fast and accurate work and durability were given special care in working out this improved design. These chucks are also carefully tested for balance after assembly and possess many notable features.

Convertible—Independent or Universal

Easy conversion from Independent to Universal or vice versa is obtained by the substitution of different operating screws and the changing of one jaw. This change can be made in a moment without detaching from face-plate or machine.

The jaws are wide and firm, the screws and bearings ample in size. All parts are accurately made to gauge and are interchangeable. Slip jaws regularly furnished are made of machinery steel to standard dimensions. Tool steel or cast-iron slips quoted on request.

The bearings are case-hardened and so designed as to be easily replaceable. They are so placed as to protect both the bearings and screws from injury by dirt and chips.

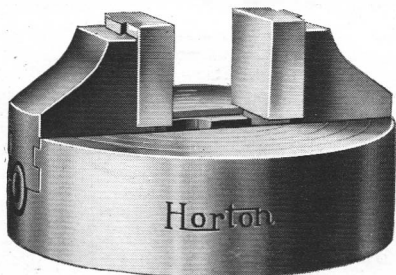
List Prices and Code Words — Box Body

Size In.	List Price Ind. or Univ.	Code Ind.	Code Univ.	Main Jaws Each	Slips per Pair	Screw Ind. Each	Screw Univ. Each
7"	\$28.00	Calum	Cedar	\$ 7.50	\$2.50	\$1.75	\$3.50
9"	33.00	Capac	Cement	10.00	3.00	2.25	4.50
12"	40.00	Carney	Center	11.50	3.75	2.50	5.00
15"	50.00	Carson	Cereal	18.00	5.00	3.00	6.00

For dimensions, see next page

HORTON TWO-JAW CHUCKS

Independent and Universal—Round Body

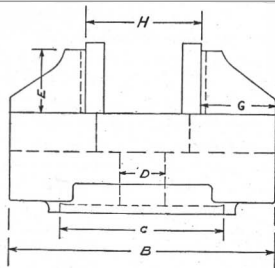
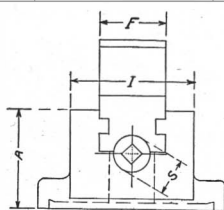


This chuck contains in a Round Body the same improved features as the Box Body chuck shown on the preceding page—careful design, strength and accuracy of parts, replaceable bearings.

Converted quickly from Independent to Universal or vice versa by substitution of jaw and screw. See page 38.

List Prices and Code Words — Round Body

Size In.	List Price Ind. or Univ.	Code Ind.	Code Univ.	Main Jaws Each	Slips per Pair	Screw Ind. Each	Screw Univ. Each
7"	\$28.00	Clara	Cole	\$ 7.50	\$2.50	\$1.75	\$3.50
9"	33.00	Clay	Colby	10.00	3.00	2.25	4.50
12"	40.00	Cliff	Congo	11.50	3.75	2.50	5.00
15"	50.00	Clove	Corn	18.00	5.00	3.00	6.00



Approximate Dimensions — Box and Round Body

Size In.	A Box	A Rd.	B	C	D	E	F	G	H	I Box	S	Wt. lbs. Box	Wt. lbs. Rd.
7"	2 1/2	2 11/16	6 15/16	4 3/4	1 1/8	1 5/8	1 1/2	2	3	3	15/16	18	28
9"	3 3/8	3 5/8	9 1/16	5 5/8	1 1/2	2 1/8	2 1/4	2 9/16	4	4 1/4	1 1/4	38	45
12"	3 5/8	3 5/8	12	7	1 3/4	2 7/8	2 1/4	3 1/16	6	4 5/8	1 7/16	58	70
15"	3 3/4	3 3/4	15	7	2	3 1/4	2 1/4	3 9/16	8	5	1 7/16	78	103

THE HORTON-MORROW DRILL CHUCK

HAND-OPERATED

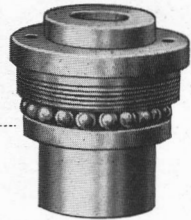
This is a HAND-OPERATED Ball-Bearing Drill Chuck — Self-tightening, with Automatic Grip, and will drive high-speed drills positively without slipping.

The patent Releasing device insures quick and unresisting release by hand. This is a most important feature and is distinctive in the "Morrow Chuck," and thoroughly protected by the Morrow patents owned by this company.

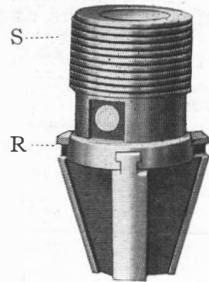
The automatic gripping and releasing action of the chuck will be understood by reference to the small cuts in connection with the larger transparent illustration.

The screw, "S," is threaded into the head, "H," with a large-diameter fine-pitch left-hand thread, and by the resistance of the drill is advanced from the head or spindle of chuck, extending and closing the jaws which bear against the ground inside surface of the Hood.

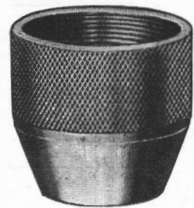
The jaws are carried by grooves in the releaser, "R," which has a coarse pitch or cam thread acting within the screw and is driven by two pins engaging in slots in the end of the screw. The slots being wider than the diameter of the pins, allow the releaser to be given a small amount of movement within the screw. In the opening action, this slight rotation of the releaser, operating through the coarse thread, removes all driving strain from the screw, and thus a perfectly sure and instant release by hand is insured.



Head - Ring - Balls



Screw - Pin - Releaser
Jaws

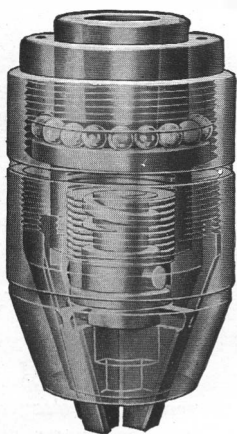


Hood

TABLE OF DIMENSIONS

No.	Capacity	Length	Diam.	Net Weight
1	0"-1/4"	2 11/16"	1 1/4"	11 oz.
2	0"-3/8"	3 27/64"	1 3/8"	1 lb. 7 oz.
3	0"-1/2"	4 9/32"	2 3/16"	2 lb. 15 oz.
4	1/4"-3/4"	5 1/8"	2 3/8"	4 lb. 15 oz.
5	1/2"-1"	5 37/64"	3"	7 lb. 2 oz.

" HORTON-MORROW "



Hand-Operated



Self-Tightening

The screw and releaser as well as the head of spindle are all thoroughly hardened. The ball bearing is between the hardened ring and the hardened flange of the head. Large balls are used. The hoods are hardened all over, and the inside of hood is ground to an absolutely correct surface.

The jaws are made from a high-grade alloy steel. They are ground all over, and are so perfectly to gauge that no grinding on bite is required after assembling.

List Prices Horton-Morrow Drill Chucks

No.	Capacity	List Price	Code Word
1	0" to 1/4"	\$ 7.50	Moone
2	0" to 3/8"	8.50	Mese
3	0" to 1/2"	11.00	Meare
4	1/4" to 3/4"	20.00	Mowe
5	1/2" to 1"	28.00	Marve

List Prices of Parts

Chuck No.	1	2	3	4	5
Jaws, Set	\$2.00	\$2.50	\$3.00	\$3.50	\$3.50
Head, H	1.00	1.15	1.30	3.00	3.75
Releaser, R	—	.75	.85	1.75	2.00
Screw, S	.75	.75	.85	1.75	1.85
Hood	.90	1.00	1.25	3.00	3.10

For Arbors see page 46.

HORTON Geared Drill Chuck

This is a convenient, serviceable drill chuck. The geared sleeve and key enable it to be easily operated with one hand and assure a powerful grip. Opening and closing the jaws is done by hand, the wrench being used only to tighten or release.

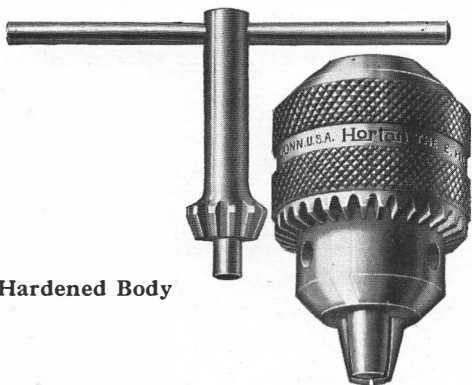
Its pointed shape gives the operator an unobstructed view of his work, a matter of especial importance on the small sizes. Construction and design is simple, the jaws being actuated by a nut which is a pressed fit in the sleeve. Its appearance is neat and compact.

The Hardened Body, a Horton feature, helps the chuck stand shocks, reduces wear and prevents the holes for keys from wearing out of round. Body and parts are carefully proportioned to stand the strain of the largest drill within the capacity of each chuck. The best of materials are used.

Careful workmanship makes this an accurate chuck. Formerly known as the "Ellison" Drill Chuck, manufactured by the American Machine Co., it was taken over by the Horton Company in March, 1921. The experience and equipment which has made the Horton-Morrow drill chuck so well and favorably known insures a chuck that will give satisfactory service and maintain the high standard previously set.

No.	Weight	Length	Diam.
1	5 oz.	1 $\frac{15}{16}$ in.	1 $\frac{3}{16}$ in.
1A	4 $\frac{1}{2}$ oz.	1 $\frac{13}{16}$ in.	1 $\frac{3}{16}$ in.
2	14 $\frac{1}{2}$ oz.	2 $\frac{3}{4}$ in.	1 $\frac{11}{16}$ in.
2A	13 oz.	2 $\frac{9}{16}$ in.	1 $\frac{11}{16}$ in.
3	2 lbs. 5 oz.	3 $\frac{15}{16}$ in.	2 $\frac{5}{16}$ in.
3A	2 lbs. $\frac{1}{2}$ oz.	3 $\frac{5}{8}$ in.	2 $\frac{5}{16}$ in.
4	4 lbs. 5 $\frac{1}{2}$ oz.	4 $\frac{15}{16}$ in.	2 $\frac{7}{8}$ in.
5	6 lbs. 9 oz.	5 $\frac{5}{16}$ in.	3 $\frac{3}{8}$ in.
6A	1 lb. 1 $\frac{1}{2}$ oz.	3 $\frac{3}{8}$ in.	1 $\frac{15}{16}$ in.

HORTON Geared Drill Chuck



Hardened Body

LIST PRICES HORTON GEARED DRILL CHUCKS

No.	Style	Capacity	List Price	Code Word
1	Regular	0— $\frac{7}{32}$ "	\$5.50	Ridge
1A	Flat Back	0— $\frac{1}{4}$ "	5.50	Ridle
2	Regular	0— $\frac{11}{32}$ "	5.50	Riese
2A	Flat Back	0— $\frac{3}{8}$ "	5.50	Rifle
3	Regular	0— $\frac{17}{32}$ "	9.00	Rinad
3A	Flat Back	0— $\frac{17}{32}$ "	9.00	Ripon
4	Regular	$\frac{1}{8}$ "— $\frac{3}{4}$ "	15.00	Ririe
5	Regular	$\frac{3}{8}$ "—1"	20.00	Rising
6A	Flat Back	0— $\frac{1}{2}$ "	9.00	River

Flat Back Chucks can be furnished with threaded hole instead of taper hole in sizes 1, 2, 3 and 6 at the same list prices as for regular chucks.

List Prices of Parts

Chuck No.	Keys	Jaws, Set	Nuts	Sleeves
1	\$0.30	\$1.65	\$0.55	\$0.55
2	.30	1.95	.55	.55
3	.45	2.70	.90	.90
4	.75	4.50	1.50	1.50
5	1.25	6.75	2.25	2.25
6	.45	2.70	.90	.90

Chucks with letter affixed to number require same parts and arbor as Regular.
For Arbors see page 46.

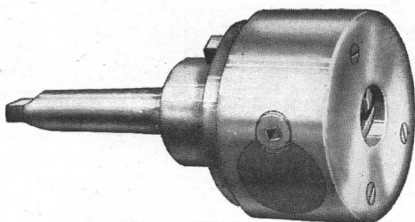
HORTON Two-Jawed Drill Chuck

Style BB

This is the simplest, most compact drill chuck made. We have manufactured it in steadily increasing quantity since 1892 and believe few tools will stand so much hard work and severe usage.

There are only four parts in the entire chuck — the screw, two jaws and a solid body. The jaws, operated by a right and left hand screw, are cylindrical and can thus be made a close fit in the reamed hole in the body and yet work freely. There is no tendency to bind, cramp or spring the screw.

It has, in all sizes, a large range and capacity combined with small diameter. Note diameters and capacities given in the table on the opposite page.

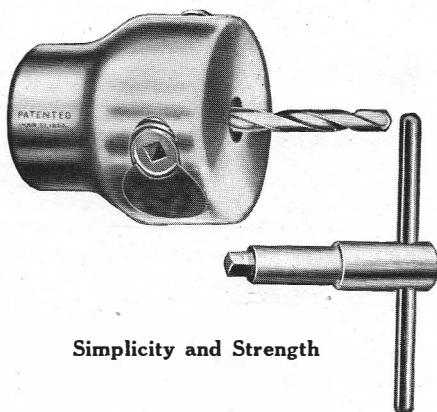


The two largest sizes, Nos. 5 and 6, are made with a straight body and fitted to a face-plate bored for Morse Taper arbors as illustrated above. Smaller sizes are made with a formed body as shown on the opposite page.

Model C No. 2, Positive Drive or Tapping Chuck

For tapping and similar work this chuck is fitted with auxiliary set screws tapped through the body above the jaws. In this form it is known as Model C No. 2. Regularly kept in stock in sizes from No. 0 to No. 4.

HORTON Two-Jawed Drill Chuck Style BB



Simplicity and Strength

List Prices of HORTON Style BB Drill Chuck

No.	Approximate Diam. of Body	Will hold Drill	List Price	Code Word
0	1 $\frac{3}{8}$ in.	0 to $\frac{1}{4}$ in.	\$6.00	Walden
1	1 $\frac{15}{16}$ in.	0 to $\frac{3}{8}$ in.	6.50	Warsaw
2	2 $\frac{3}{16}$ in.	0 to $\frac{1}{2}$ in.	7.00	Watts
3	2 $\frac{15}{16}$ in.	0 to $\frac{3}{4}$ in.	8.00	Watson
4	3 $\frac{1}{2}$ in.	0 to 1 in.	10.00	Wesley
5	5 $\frac{1}{4}$ in.	0 to 1 $\frac{1}{2}$ in.	18.00	Willet
6	6 $\frac{1}{4}$ in.	0 to 2 in.	20.00	Willow

HORTON C No. 2 Positive Drive or Tapping Chuck

No.	Approximate Diam. of Body	Capacity	List Price	Code Word
0	1 $\frac{3}{8}$ in.	0 to $\frac{1}{4}$ in.	\$7.50	Cant
1	1 $\frac{15}{16}$ in.	0 to $\frac{3}{8}$ in.	8.00	Cake
2	2 $\frac{3}{8}$ in.	0 to $\frac{1}{2}$ in.	9.00	Calf
3	2 $\frac{15}{16}$ in.	0 to $\frac{3}{4}$ in.	11.00	Cree
4	3 $\frac{1}{2}$ in.	0 to 1 in.	12.00	Cinch

List Prices of Parts

No.	Body	Jaws per Pair	Screws Each	Wrench
0	\$2.75	\$2.75	\$1.00	\$0.50
1	2.88	2.88	1.12	.62
2	3.00	3.00	1.25	.75
3	3.25	3.25	1.50	1.00
4	3.50	3.50	1.75	1.25
5	6.50	6.50	3.50	1.50
6	7.00	7.00	4.00	2.00

For Arbors see page 46.

Drill Chuck Center Arbors

Morse Taper Arbors

Blank Arbors



Specify model of chuck when ordering arbors because the taper on the chuck end varies with the model.

32nd sizes of Geared Chucks take list for nearest size.

For best results arbors should have a perfect fit. Horton Arbors are ground on both tapers to correct gauges.

Morse Taper No.	Size Chuck — Approx. Capacity				
	1/4"	3/8"	1/2"	3/4"	1"
1	\$0.80	\$0.80	\$1.20	\$1.40	\$2.00
2	.80	.80	1.20	1.40	2.00
3	1.20	1.20	1.20	1.40	2.00
4	2.00	2.00	2.00	2.00	2.50
5	—	—	2.75	2.75	2.75

Diam. Blank Arbor	Size Chuck — Approx. Capacity				
	1/4"	3/8"	1/2"	3/4"	1"
1/2"	\$0.75	\$0.75	\$0.75	\$1.00	\$1.25
3/4"	.75	.75	.75	1.00	1.25
1"	.75	.75	.75	1.00	1.25

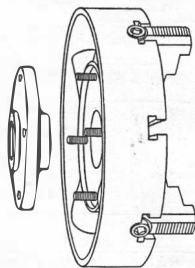
Face-Plate Castings

We have a full set of combination patterns for making up any proportion of face-plate pattern, and are prepared to furnish such castings at a reasonable per lb. price.

Three dimensions are needed to select a suitable pattern, viz.: *First*, The diameter of the face-plate recess of the chuck to which the plate is to be fitted; also, *Second*, The diameter of spindle end; and *Third*, The length of the threaded spindle end.



Style A



Style B

Where the proportion of size of hole through the chuck to the threaded spindle end allows, there are many advantages to be gained by putting the hub of the face plate inside the chuck. The illustration shows an 18 in. chuck and the face plate (Style B) detached which were fitted to a 20 in. lathe of standard type, the lathe swinging 22 in.; in this instance, the face of chuck was only 1 1/8 in. beyond the end of the spindle.

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