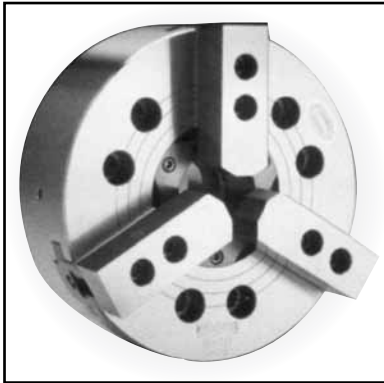


Power Chucks B & BT Series



B Series

Three-jaw and two-jaw wedge style power chucks are ideal for high speed chucking, bar chucking and universal machining. These deliver consistent accuracy and repetitive chucking.

Special Features:

- Large Thru-Hole
- Strong Clamping force
- High Speed
- Compact and Lightweight
- Direct Mount
- High Accuracy and High Endurance

SPECIFICATIONS

MODEL	UNIT	B-15A08	B-15A11	B-18A08	B-18A11	B-21A11	B-21A15	B-24A11	B-24A15
Spindle Nose		A2-8	A2-11	A2-8	A2-11	A2-11	A2-15	A2-11	A2-15
Thru-Hole	in.	4.626	4.626	4.626	4.626	5.512	5.512	6.496	6.496
Jaw Stroke (Diameter)	in.	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.417
Plunger Stroke	in.	0.906	0.906	0.906	0.906	0.906	0.906	0.906	0.906
Max. Draw Bar Pull Force	lbs.	15639	15639	15639	15639	19824	19824	19824	19824
Max. Gripping Force	lbs.	39648	39648	39648	39648	51542	51542	51542	51542
Max Speed	rpm	2500	2500	2000	2000	1700	1700	1400	1400
Net Weight	lbs.	245.8	230.6	405.0	380.0	540.7	528.6	638.8	627.8
GD ²	lbs.+ft ²	216.9	208.6	471.8	452.8	908.1	877.2	1628.8	1598.0
Matching Cylinder		F2511H	F2511H	F2511H	F2511H	F2511H	F2511H	F2511H	F2511H
Matching Soft Top Jaw		B015	B015	B015	B015	B018	B018	B018	B018
Matching Hard Top Jaw		GT15	GT15	GT15	GT15	HB18B2	HB18B2	HB18B2	HB18B2



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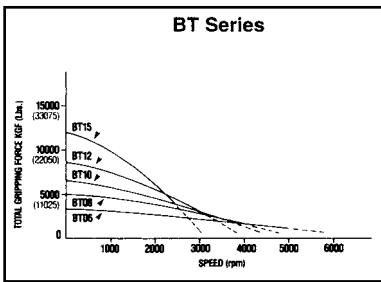
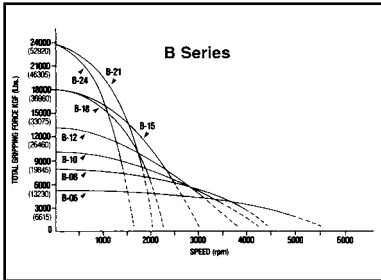


BT Series

MODEL	UNIT	BT15A08	BT15A11
Spindle Nose	in.	A2-8	A2-11
Thru-Hole	in.	4.626	4.626
Jaw Stroke (Diameter)	in.	0.417	0.417
Plunger Stroke	in.	0.906	0.906
Max. Draw Bar Pull Force	lbs.	10352	10352
Max. Gripping Force	lbs.	26432	26432
Max Speed	rpm	2500	2500
Net Weight	lbs.	234.8	219.6
GD ²	lbs.+ft ²	199.4	191.1
Matching Cylinder		F2511H	F2511H
Matching Soft Top Jaw		B015	B015

U.S. Patent NO 4410192

B & BT Series (CONT'D)



Model B and BT Series Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground to assure consistent accuracy and performance.

Lubrication nipple in each base jaw.

Master Jaw Serration:

Chuck size 6" to 18" 1.5mm x 60°
 Chuck size 21" & 24" 3 mm x 60°

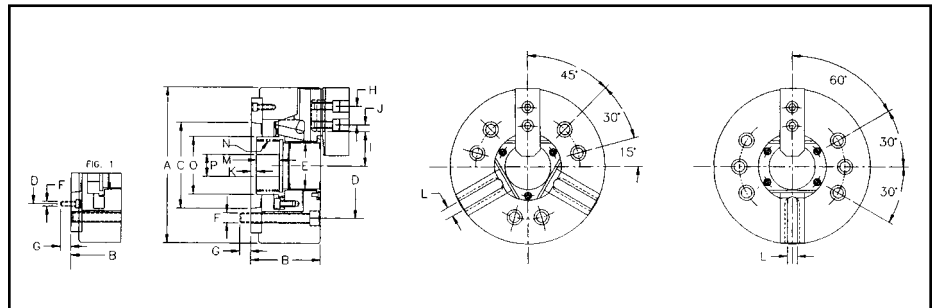
Mounting:

Direct mounting to fit ASA B5.9 type A
 (interchangeable with DIN 55026)

Standard Equipment:

Chuck assembled with adapter, chuck mounting bolts. T-nuts and jaw mounting bolts with wrench, draw nut wrench.

DIMENSIONAL DRAWINGS (Fig. 1)



**Gripping
 Characteristics
 Graphs**



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 SEE PAGE 5-94

DIMENSIONS (Dimension in inches)

MODEL	B-15A08 BT-15A08	B-15A11 BT-15A11	B-18A08	B-18A11	B-21A11	B-21A15	B-24A11	B-24A15
A	15.000	15.000	17.717	17.717	20.866	20.866	24.016	24.016
B	6.299	5.866	6.299	5.866	6.890	6.339	7.244	6.9693
C	5.501	7.751	5.501	7.751	7.751	11.250	7.751	11.250
D	6.750	9.252	6.750	9.252	9.252	13.000	9.252	13.000
E	4.626	4.626	4.626	4.626	5.512	5.512	6.496	6.496
F	6xM16	6xM20	6xM16	6xM20	6xM20	6xM22	6xM20	6xM22
G	0.945	1.102	0.945	1.102	1.181	1.339	1.181	1.378
H	1.693	1.693	1.693	1.693	2.362	2.362	2.362	2.362
I max.	3.228	3.228	3.228	3.228	3.878	3.878	4.252	4.252
I min.	3.020	3.020	3.020	3.020	3.669	3.669	4.043	4.043
J max.	1.724	1.724	3.083	3.083	3.448	3.448	4.630	4.630
J min.	0.719	0.719	0.719	0.719	0.847	0.847	0.847	0.847
K max.	1.732	1.299	1.732	1.299	2.047	1.496	2.402	1.850
K min.	0.827	0.394	0.827	0.394	1.142	0.591	1.496	0.945
L	0.866	0.866	0.866	0.866	0.984	0.984	0.984	0.984
M	1.299	1.299	1.299	1.299	1.299	1.299	1.378	1.378
N max.	M130x2.0	M130x2.0	M130x2.0	M130x2.0	M155x3.0	M155x3.0	M175x3.0	M175x3.0
O	5.472	5.472	5.472	5.472	6.693	6.693	7.362	7.362
P	2.362	2.362	2.362	2.362	3.150	3.150	3.150	3.150

B-15A08, B18A08, B-21A11, B-24A11, BT10A06, BT12A06, and BT15A08 are referred to in Fig. 1.
 Draw nut is supplied without thread.

Power Chucks B200 & BT200 Series

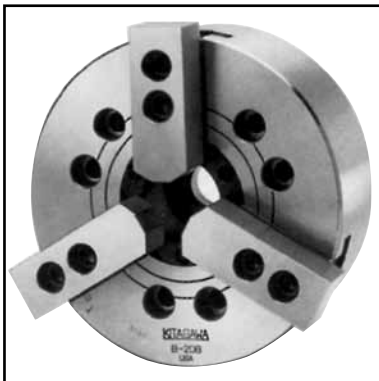
Three-jaw and two-jaw wedge style power chucks deliver up to 20% more speed, gripping force and bore size when compared to conventional chucks. The B200 Series Chucks have the largest bores of any wedge style power chuck. These deliver consistent accuracy and repetitive chucking.



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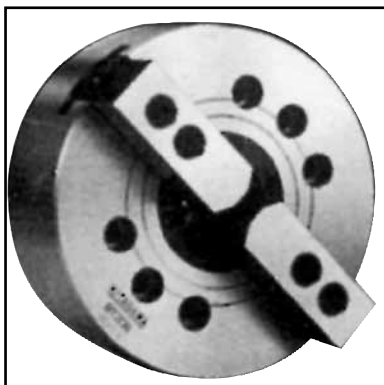
Special Features:

- Large Thru-Hole
- Compact and Lightweight
- Strong Clamping Force
- Direct Mount
- High Speed
- High Accuracy and High Endurance



B200 Series

MODEL	UNIT	B204	B205	B206A05	B208A06	B210A06	B210A08	B212A06	B212A08
Spindle Nose		3.346	4.331	A2-5	A2-6	A2-6	A2-8	A2-6	A2-8
Thru-Hole	in.	1.024	1.299	1.772	2.047	2.953	2.953	3.583	3.583
Jaw Stroke (Diameter)	in.	0.213	0.213	0.217	0.291	0.346	0.346	0.417	0.417
Plunger Stroke	in.	0.394	0.394	0.472	0.630	0.748	0.748	0.906	0.906
Max. Draw Bar Pull Force	lbs.	3150	3930	4846	7808	9471	9471	12115	12115
Max. Gripping Force	lbs.	6400	8090	12555	19292	24449	24449	31718	31718
Max Speed	rpm	8000	7000	6000	5000	4200	4200	3300	3300
Net Weight	lbs.	8.8	14.7	27.1	48.5	81.1	75.1	122.9	117.0
GD ²	lbs.+ft ²	0.52	1.4	5.2	15.6	29.9	28.9	65.7	64.7
Matching Cylinder		F0933H	F0933H	S1246	S1552	S1875	S1875	S2091	S2091
Matching Soft Top Jaw		BR04	BR05	B006	B008	B010	B010	BR13	BR13
Matching Hard Top Jaw		GT04	GT04	GT06	GT08	GT10	GT10	GT13	GT13

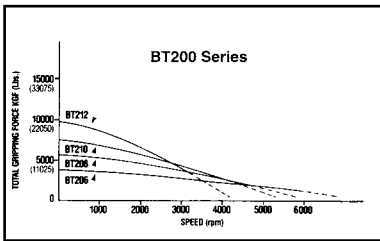
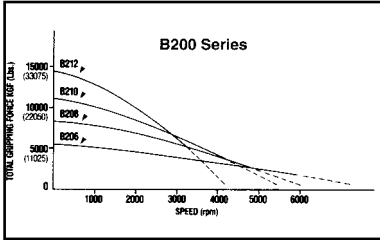


BT200 Series

MODEL	UNIT	BT205	BT206A05	BT208A06	BT210A06	BT210A08	BT212A06	BT212A08
Spindle Nose		4.331	A2-5	A2-6	A2-6	A2-8	A2-6	A2-6
Thru-Hole	in.	1.299	1.772	2.047	2.953	2.953	3.583	3.583
Jaw Stroke (Diameter)	in.	0.213	0.217	0.291	0.346	0.346	0.417	0.417
Plunger Stroke	in.	0.394	0.472	0.630	0.748	0.748	0.906	0.906
Max. Draw Bar Pull Force	lbs.	2625	3258	5053	6401	6401	8242	8242
Max. Gripping Force	lbs.	5383	8535	12577	16621	16621	21562	21562
Max Speed	rpm	7000	6000	5000	4200	4200	3300	3300
Net Weight	lbs.	14.3	26.7	45.4	76.2	70.3	112.1	106.2
GD ²	lbs.+ft ²	1.4	5.1	14.7	28.0	27.0	60.0	59.0
Matching Cylinder		S1036	S1246	S1552	S1875	S1875	S2091	S2091
Matching Soft Top Jaw		BR05	B006	B008	B010	B010	BR13	BR13
Matching Hard Top Jaw		-	-	-	-	-	-	-

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B200 & BT200 Series (CONT'D)



Model B200 and BT200 Series Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground to assure consistent accuracy and performance.

Lubrication nipple in each base jaw.

Master Jaw Serration:

Chuck size 6" to 12" 1.5 mm x 60°

Mounting:

Direct mounting to fit ASA B5.9 type A
(interchangeable with DIN 55026)

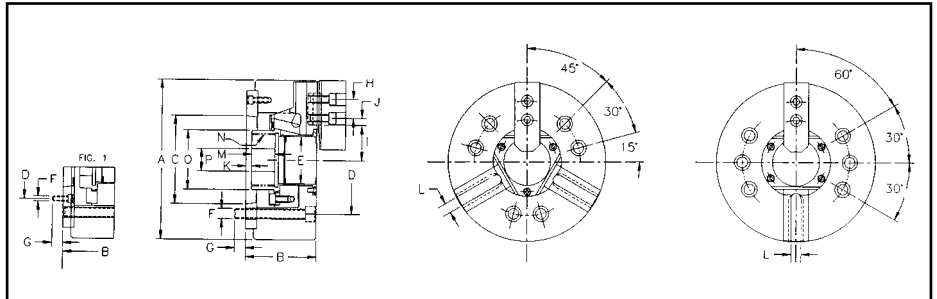
Standard Equipment:

Chuck assembled with adapter, chuck mounting bolts. T-nuts and jaw mounting bolts with wrench, draw nut wrench.



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DIMENSIONAL DRAWINGS

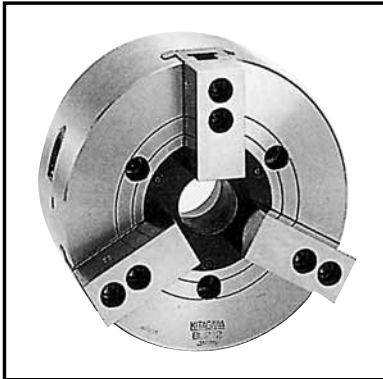


DIMENSIONS (Dimension in inches)

MODEL	B206A05 BT206A05	B208A06 BT208A06	B210A06 BT210A06	B210A08 BT210A08	B212A06 BT212A06	B212A08 BT212A08
A	6.654	8.268	10.000	10.000	11.969	11.969
B	3.583	4.055	4.724	4.449	5.079	4.803
C	3.250	4.188	4.188	5.501	4.188	5.501
D	4.125	5.250	5.250	6.750	5.250	6.750
E	1.772	2.047	2.953	2.953	3.583	3.583
F	6xM10	6xM12	6xM12	6xM16	6xM12	6xM16
G	0.630	0.709	0.728	0.945	0.728	0.984
H	0.787	0.984	1.181	1.181	1.181	1.181
I max.	1.260	1.524	2.008	2.008	2.413	2.413
I min.	1.152	1.378	1.835	1.835	2.205	2.205
J max.	0.896	1.171	1.329	1.329	1.803	1.803
J min.	0.364	0.581	0.561	0.561	0.621	0.621
K max.	1.024	1.240	1.319	1.043	1.299	1.024
K min.	0.551	0.610	0.571	0.295	0.394	0.118
L	0.472	0.551	0.630	0.630	0.827	0.827
M	0.591	0.650	0.787	0.787	0.906	0.906
N max.	M55X2.0	M60X2.0	M85X2.0	M85X2.0	M100X2.0	M100X2.0
O	2.362	2.598	3.701	3.701	4.252	4.252
P	0.787	1.181	1.772	1.772	1.969	1.969

B210A06, B212A06, BT210A06, BT212A06 are referred to in Fig. 1.
Draw nut is supplied without thread.

Lever Style Power Chucks BL200 Series



BL200 Series

Three-jaw lever style power chucks are ideal for applications requiring extra long jaw stroke. These deliver consistent accuracy and repetitive chucking.

Special Features:

- Large Thru-Hole
- Extra Long Stroke
- Suitable for Automated Systems
- Compact and Lightweight
- Direct Mount
- High Accuracy and High Endurance

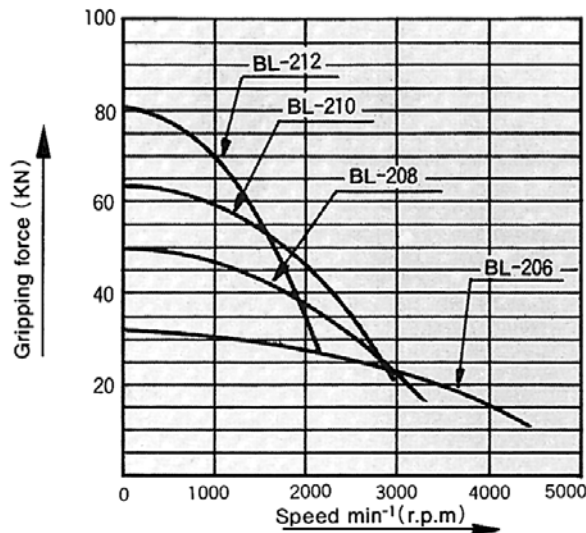


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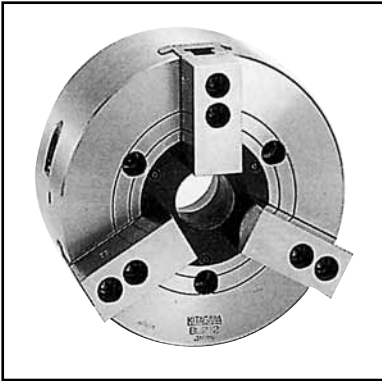
MODEL	UNIT	BL-206	BL-208	BL-210	BL-212
Open Center (Diameter)	in.	1.102	1.772	2.087	2.480
Jaw Stroke (Diameter)	in.	0.787	0.984	1.181	1.378
Plunger Stroke	in.	0.591	0.748	0.866	0.984
Max. Draw Bar Pull Force	lbs.	6314	9218	12034	15554
Max. Gripping Force	lbs.	7040	11000	14080	18040
Max Speed	rpm	4500	3300	3000	2200
Net Weight	lbs.	30.8	55.0	94.6	165.0
GD ²	lbs.·ft ²	3.4	15.8	29.4	73.4
Matching Cylinder		S1246	S1552	S1875	S2091
Matching Hard Top Jaw		GT06	GT08	GT10	GT13
Matching Soft Top Jaw		B006	B008	B010	BR13

(1) With Soft Top Jaw

Gripping Characteristic Graph



BL200 Series (CONT'D)



BL200 Series

Model BL200 Series Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground to assure consistent accuracy and performance.

Lubrication nipple in each base jaw.

Master Jaw Serration:

Chuck size 6" to 12" 1.5 mm x 60°

Mounting:

Direct mounting to fit ASA B5.9 type A (interchangeable with DIN 55026)

Standard Equipment:

Chuck assembled with adapter, chuck mounting bolts. T-nuts and jaw mounting bolts with wrench, draw nut wrench.

DIMENSIONAL DRAWINGS

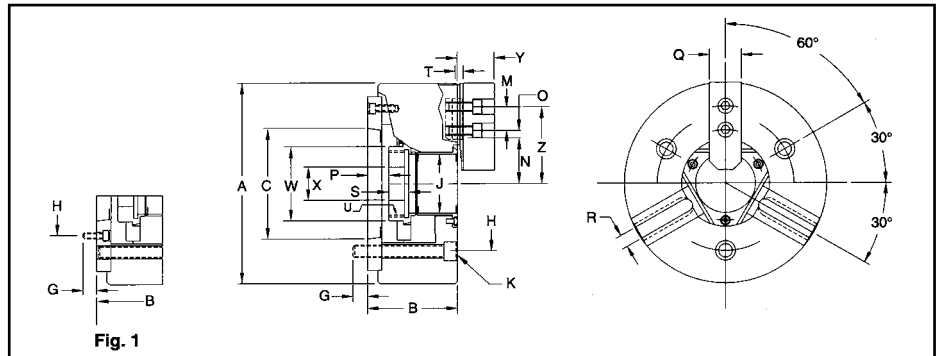


Fig. 1



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DIMENSIONS (Dimension in inches)

MODEL	BL-206A05	BL-208A06	BL-210A06*	BL-210A08	BL-212A06*	BL-212A08
A	6.496	8.268	10.000	10.000	11.969	11.969
B	3.819	4.409	5.394	5.118	6.220	5.945
C	3.250	4.188	4.188	5.501	4.188	5.501
G	0.551	0.709	0.728	0.984	0.728	0.984
H	4.126	5.252	5.252	6.748	5.252	6.748
J	1.102	1.772	2.087	2.087	2.480	2.480
K	3-M10	3-M12	3-M16	3-M16	3-M16	3-M16
M	0.787	0.984	1.181	1.181	1.181	1.181
N max.	1.516	2.087	2.461	2.461	2.933	2.933
N min.	1.122	1.594	1.870	1.870	2.244	2.244
O max.	0.660	0.818	1.034	1.034	1.507	1.507
O min.	0.364	0.463	0.443	0.443	0.502	0.502
P max.	0.984	0.787	0.748	0.472	1.307	1.031
P min.	0.394	0.039	-0.118	-0.394	0.3231	0.047
Q	1.024	1.378	1.575	1.575	1.969	1.969
R	0.472	0.551	0.630	0.630	0.827	0.827
S	0.945	1.260	1.575	1.575	1.496	1.496
T	0.079	0.079	0.079	0.079	0.118	0.118
U max.	M38x1.5	M55x2.0	M65x2.0	M65x2.0	M75x2.0	M75x2.0
W	1.772	2.480	2.874	2.874	3.268	3.268
X	0.787	1.181	1.772	1.772	1.969	1.969
Y	1.142	1.535	1.693	1.693	2.047	2.047
Z	2.598	3.740	4.330	4.330	4.370	4.370

* See figure 1

Counter Balanced Power Chucks HOH Series



HOH Series

Three-jaw wedge style power chucks are ideal for ultra high speed applications. They provide maximum gripping force at high speeds. Their unique built-in counter balanced mechanism assures stabilized jaw force every time. These deliver consistent accuracy and repetitive chucking. Counter balance allows for lower pressure gripping which is suitable for thin wall materials.

Special Features:

- High Speed
- Large Thru-Hole
- Greater Gripping Forces at High Speeds
- High Accuracy and High Endurance
- Compact and Lightweight
- Direct Mount
- Lower Gripping Force Capability

SPECIFICATIONS

MODEL	UNIT	HOH-206	HOH-208	HOH-10K	HOH-12K	HOH-15K
Spindle Nose (2)		A2-5	A2-6	A2-8	A2-8	A2-11
Open Center (Diameter)	in.	1.772	2.047	2.559	3.071	4.626
Jaw Stroke (Diameter)	in.	0.217	0.291	0.346	0.417	0.417
Plunger Stroke	in.	0.472	0.630	0.748	0.906	0.906
Max. Draw Bar Pull Force	lbs.f	4840	7480	8370	10792	15638
Max. Gripping Force	lbs.f	12540	18480	21806	28414	39647
Max Speed	rpm	7000	6000	4500	3500	2800
Net Weight	lbs.	34.5	66.0	79.5 (1)	133.0 (1)	244.5 (1)
GD ²	lbs.+ft ²	6.27	17.9	30.1	71.2	216.0
Matching Cylinder		S1246	S1552	F1768H	F2078H	F2511H
Matching Hard Top Jaw		GT06	GT08	GT10	GT12	GT15
Matching Soft Top Jaw		B006	B008	B010	B012	B015

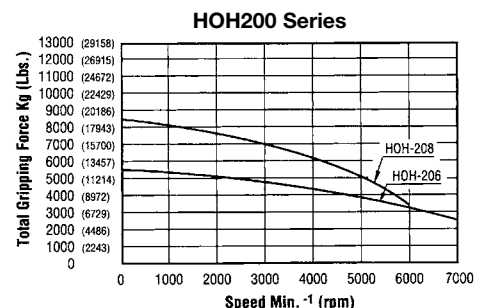
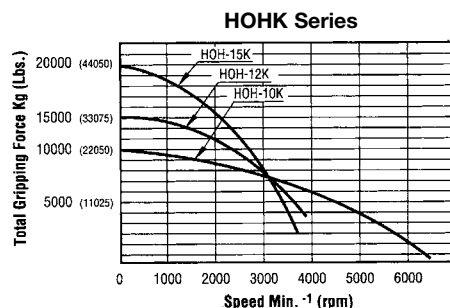
(1) Without top jaws.

(2) Other spindle mounts available.



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GRIPPING CHARACTERISTIC GRAPHS



U.S. Patent NO 4410192

HOH Series (CONT'D)



HOH Series

Uses can vary from those high-speed operations requiring heavy jaw forces for roughing work to those requiring light jaw forces for preventing part distortions. This Counter Balanced Chuck design assures accurate, repetitive chucking.

Model HOH Chucks are ultra high speed three-jaw counter balanced open center power chucks, direct mounted on ASA B5.9 type A spindles.

Model HOH Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground for accurate actual running and long service repeatability.

Lubrication nipple in each base jaw.

Base Jaw Serration

Chuck size 6" to 15" 1.5 mm X 60°

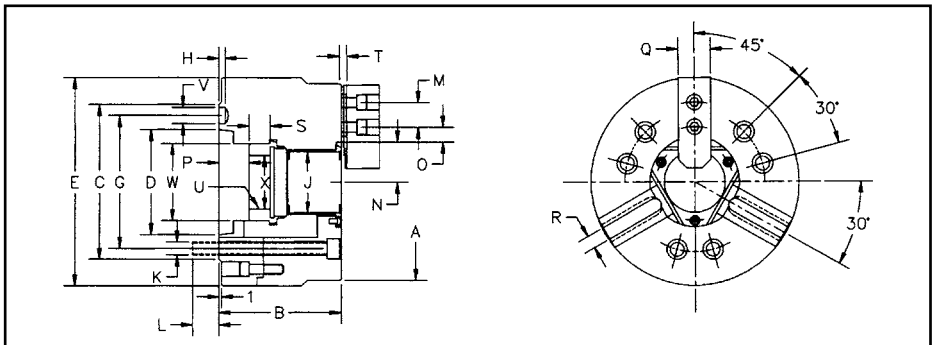
Mounting:

Direct mounting to fit ASA B5.9 type A (interchangeable with DIN 55026) DIN 55021, 55022 and 55027 mounting are available on request.

Standard Equipment:

Chuck assembled with adapter, chuck mounting bolts. T-nuts and jaw mounting bolts with wrench, draw nut wrench.

DIMENSIONAL DRAWINGS



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SEE PAGE 5-94

SOFT TOP JAW DIMENSIONS (Dimension in inches)

MODEL	HOH-206	HOH-208	HOH-10K	HOH-12K	HOH-15K	MODEL	HOH-206	HOH-208	HOH-10K	HOH-12K	HOH-15K
A	6.654	8.268	10.000	11.969	15.000	O max.	0.945	1.181	1.329	1.919	1.841
B	3.740	4.331	4.488	4.921	6.063	O min.	0.295	0.413	0.443	0.443	0.541
C	5.315	6.496	8.268	8.268	11.024	P max.	1.181	1.398	0.551	1.142	1.496
D	3.2503	4.1881	5.5009	5.5005	7.7505	P min.	0.709	0.768	-0.197	0.236	0.591
E	6.890	8.858	10.000	11.969	15.000	Q	1.024	1.378	1.575	1.969	2.441
G	4.125	5.250	6.750	6.750	9.252	R (H8)	0.472	0.551	0.630	0.709	0.866
H	0.256	0.256	0.315	0.315	0.394	S	0.591	0.787	1.181	1.299	1.299
J	1.772	2.047	2.559	3.071	4.626	T	0.197	0.197	0.197	0.197	0.197
K	M10	M12	M16	M16	M20	U max.	M55x2.0	M60x2.0	M75x2.0	M88x2.0	M130x2.0
L	0.669	0.630	0.945	0.906	1.181	V ^{+0.004} / ₋₀	0.641	0.766	0.953	0.953	1.156
M	0.787	0.984	1.181	1.181	1.693	W	2.362	2.598	3.327	3.780	5.472
N max.	1.260	1.524	1.969	2.283	3.228	X	0.787	1.181	1.772	1.969	2.362
N min.	1.152	1.378	1.795	2.075	3.020						

Closed Center Power Chucks N Series



N Series

Three-jaw wedge style power chucks with closed center. Cost effective solutions for high speed chucking and universal machining where no thru-hole is required. These deliver consistent accuracy and repetitive chucking.

Special Features:

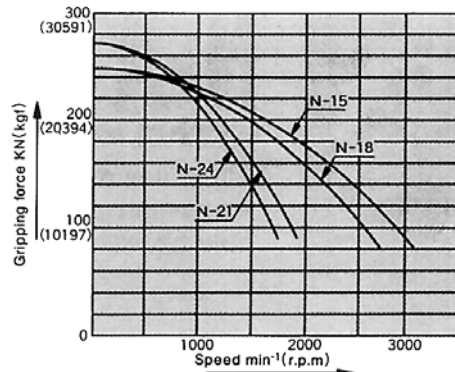
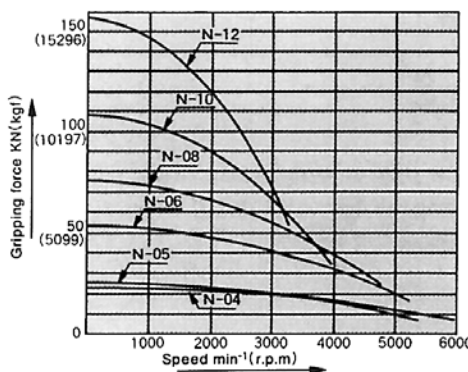
- High Speed
- Strong Clamping Force
- Interchangeable Top Tooling
- High Accuracy and High Endurance
- Compact and Lightweight
- Direct Mount

SPECIFICATIONS

MODEL	UNIT	N-06A05	N-08A06	N-10A06	N-10A08	N-12A06	N-12A08	N-15A08	N-15A11	N-18A08	N-18A11	N-21A08	N-21A11	N-21A15	N-24A11	N-24A15
Spindle Nose		A2-5	A2-6	A2-6	A2-8	A2-6	A2-8	A2-8	A2-11	A2-8	A2-11	A2-8	A2-11	A2-15	A2-11	A2-15
Jaw Stroke (Diameter)	in.	0.335	0.346	0.346	0.346	0.413	0.413	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630
Plunger Stroke	in.	0.787	0.827	0.984	0.984	1.181	1.181	1.378	1.378	1.378	1.378	1.378	1.378	1.378	1.378	1.378
Max. Draw Bar Pull Force	lbs.	4037	5608	6505	6505	9198	9198	18396	18396	18396	18396	18396	18396	18396	18396	18396
Max. Gripping Force	lbs.	11777	16826	24229	24229	34995	34995	55860	55860	55860	55860	61244	61244	61244	61244	61244
Max Speed	rpm	5270	4760	4010	4010	3380	3380	3040	3040	2710	2710	1940	1940	1940	1760	1760
Net Weight (1)	lbs.	30.8	59.4	88.0	88.0	147.4	145.2	231.0	226.6	294.8	288.2	442.2	435.6	418.0	530.2	514.8
GD ²	lbs.+ft ²	4.0	11.8	26.8	26.2	60.8	60.2	156.0	150.0	198.0	194.0	414.0	410.0	398.0	590.2	564.0
Matching Cylinder		Y1020R	Y1225R	Y1225R	Y1225R	Y1530R	Y1530R	Y2035R	Y2035R	Y2035R	Y2035R	Y2035R	Y2035R	Y2035R	Y2035R	Y2035R
Matching Hard Top Jaw		GT06	GT08	GT10	GT10	GT12	GT12	HB15N1	HB15N1	HB15N1	HB15N1	HB18B2	HB18B2	HB18B2	HB18B2	HB18B2
Matching Soft Top Jaw		B006	B008	B010	B010	B012	B012	BR15	BR15	BR15	BR15	B018	B018	B018	B018	B018

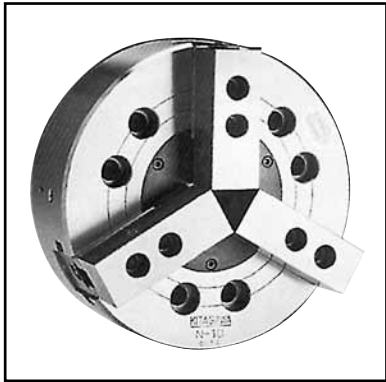
(1) Without soft top jaws.

GRIPPING CHARACTERISTIC GRAPHS



**MAKE SURE YOU
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SEE PAGE 5-94

N Series (CONT'D)



N Series



**MAKE SURE YOU
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SEE PAGE 5-94

Model N Series Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground to assure consistent accuracy and performance.

Lubrication nipple in each base jaw.

Master Jaw Serration

Chuck size 6" to 18" 1.5 mm X 60° Chuck size 21" to 24" 3 mm X 60°

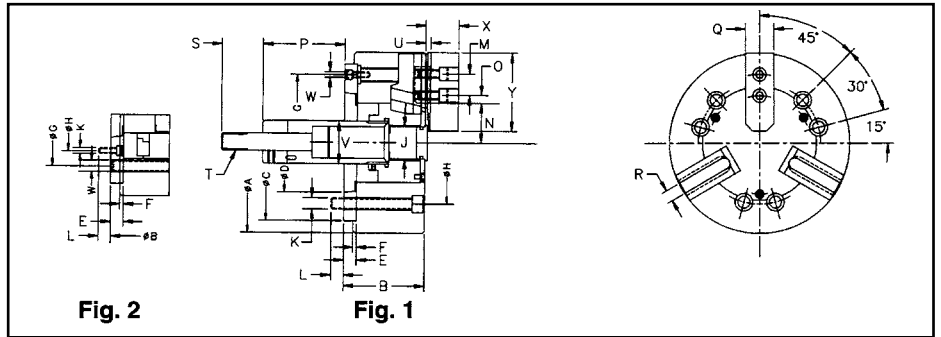
Mounting:

Direct mounting to fit ASA B5.9 type A (interchangeable with DIN 55026)

Standard Equipment:

Chuck assembled with adapter, chuck mounting bolts. T-nuts and jaw mounting bolts with wrench, draw nut wrench.

DIMENSIONAL DRAWINGS



DIMENSIONS (Dimension in inches)

MODEL	N-06A05	N-08A06	N-10A06	N-10A08	N-12A06	N-12A08	N-15A08	N-15A11	N-18A08	N-18A11	N-21A08	N-21A11	N-21A15	N-24A11	N-24A15
A	6.496	8.268	10.000	10.000	11.969	11.969	15.000	15.000	17.717	17.717	20.866	20.866	20.866	24.016	24.016
B	3.307	3.819	4.094	4.016	4.724	4.646	5.118	5.118	5.118	5.118	5.748	5.748	5.748	5.748	5.748
C (H6)	5.512	6.693	8.661	8.661	8.661	8.661	11.811	11.811	11.811	11.811	14.961	14.961	14.961	14.961	14.961
D	3.251	4.188	4.188	5.501	4.188	5.501	5.501	7.751	5.501	7.751	5.501	7.751	11.251	7.751	11.251
E	0.591	0.669	0.787	0.709	0.787	0.709	0.866	0.866	0.866	0.866	1.063	1.063	1.063	1.063	1.063
F	0.197	0.197	0.197	0.197	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236
G	4.567	5.906	6.748	7.480	6.748	7.480	9.252	10.236	9.252	10.236	13.000	13.000	13.000	13.000	13.000
H	4.126	5.252	5.252	6.748	5.252	6.748	6.748	9.252	6.748	9.252	6.748	9.252	13.000	9.252	13.000
J	0.827	0.984	1.339	1.339	1.339	1.339	-	-	-	-	-	-	-	-	-
K	6-M10	6-M12	6-M12	6-M16	6-M12	6-M16	6-M16	6-M20	6-M16	6-M20	6-M16	6-M20	6-M22	6-M20	6-M22
L	0.551	0.709	0.709	0.984	0.709	0.984	0.906	1.299	0.906	1.299	0.906	1.102	1.339	1.102	1.339
M	0.787	0.984	1.181	1.181	1.181	1.181	1.693	1.693	1.693	1.693	2.362	2.362	2.362	2.362	2.362
N max.	1.488	1.823	2.012	2.012	2.402	2.402	3.051	3.051	4.252	4.252	3.386	3.386	3.386	4.921	4.921
N min.	1.319	1.650	1.839	1.839	2.195	2.195	2.736	2.736	3.937	3.937	3.071	3.071	3.071	4.606	4.606
O max.	0.148	0.877	1.212	1.212	1.921	1.921	1.921	1.921	1.921	1.921	3.684	3.684	3.684	3.684	3.684
O min.	0.305	0.463	0.443	0.443	0.502	0.502	0.916	0.916	0.916	0.916	1.084	1.084	1.084	1.084	1.084
P max.	3.406	4.331	4.488	5.512	4.685	5.709	3.228	3.228	2.756	2.756	2.756	2.756	2.756	2.756	2.756
P min.	2.618	3.504	3.504	4.528	3.504	4.528	1.850	1.850	1.378	1.378	1.378	1.378	1.378	1.378	1.378
Q	1.220	1.378	1.575	1.575	1.969	1.969	1.969	1.969	1.969	1.969	2.559	2.559	2.559	2.559	2.559
R	0.472	0.551	0.630	0.630	0.709	0.709	1.004	1.004	1.004	1.004	0.984	0.984	0.984	0.984	0.984
S	1.417	1.417	1.417	1.417	1.417	1.417	2.165	2.165	2.165	2.165	2.165	2.165	2.165	2.165	2.165
T	M16x2.0	M20x2.5	M20x2.5	M20x2.5	M20x2.5	M20x2.5	M30x3.5	M30x3.5	M30x3.5	M30x3.5	M30x3.5	M30x3.5	M30x3.5	M30x3.5	M30x3.5
U	0.157	0.197	0.197	0.197	0.197	0.197	0.079	0.079	0.079	0.079	0.118	0.118	0.118	0.118	0.118
V	1.339	1.496	1.772	1.772	1.969	1.969	2.362	2.362	2.362	2.362	2.362	2.362	2.362	2.362	2.362
W	3-M6	3-M6	6-M16	3-M8	6-M16	3-M8	6-M20	3-M10	6-M20	3-M10	6-M22	6-M22	3-M12	6-M22	6-M12
X	1.378	1.654	1.811	1.811	2.126	2.126	2.402	2.402	2.402	2.402	2.795	2.795	2.795	2.795	2.795
Y	2.835	3.740	4.331	4.331	5.079	5.079	5.315	5.315	5.315	5.315	7.087	7.087	7.087	7.087	7.087
Fig.	1	1	2	1	2	1	2	1	1	2	1	1	2	1	2

Closed Center, Long Stroke Chucks, NL/NLT Series



NL Series

Wedge style power chucks with closed center and long stroke.. Cost effective solutions for high speed chucking and universal machining where long stroke and no thru-hole is required. These deliver consistent accuracy and repetitive chucking.

Special Features:

- Long Stroke
- Strong Clamping Force
- Interchangeable Top Tooling
- High Speed
- High Accuracy and High Endurance
- Compact and Lightweight
- Direct Mount



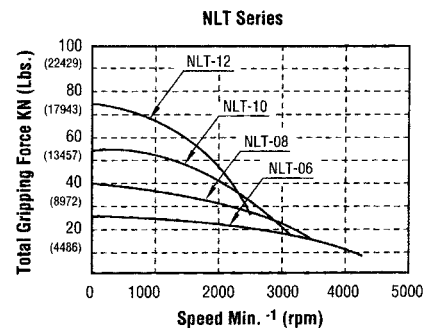
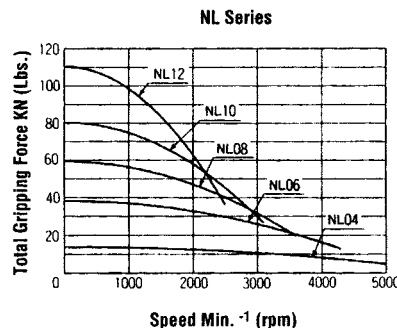
NLT Series

SPECIFICATIONS

MODEL	UNIT	NL/NLT-06A05	NL/NLT-08A06	NL/NLT-10A06	NL/NLT-10A08	NL/NLT-12A06	NL/NLT-12A08
Spindle Nose (2)		A2-5	A2-6	A2-6	A2-8	A2-6	A2-8
Jaw Stroke (Diameter)	in.	0.512	0.638	0.713	0.713	0.764	0.764
Plunger Stroke	in.	0.787	0.984	1.102	1.102	1.181	1.181
Max. Draw Bar Pull Force	lbs.f	3139	4486	5982	5982	8076	8076
Max. Gripping Force	lbs.f	5832	8972	12115	12115	16601	16601
Max Speed	rpm	4300	3600	3100	3100	2500	2500
Net Weight (1)	lbs.	27.5	52.8	79.5	78.9	135.0	134.1
GD ²	lbs.+ft. ²	3.4	10.6	23.6	23.4	57.2	56.6
Matching Cylinder		Y1020R	Y1225R	Y1530R	Y1530R	Y1530R	Y1530R
Matching Hard Top Jaw		GT06	GT08	GT10	GT10	GT12	GT12
Matching Soft Top Jaw		B006	B008	B010	B010	B012	B012

(1) Without soft top jaws.

GRIPPING CHARACTERISTIC GRAPHS



MAKE SURE YOU GREASE YOUR CHUCK WITH CHUCK-EEZ®.
SEE PAGE 5-94

NL/NLT Series (CONT'D)

Model NL/NLT Series Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground for accurate actual running and long service repeatability.

Lubrication nipple in each base jaw.

Master Jaw Serration

Chuck size 6" to 12" 1.5 mm X 60°

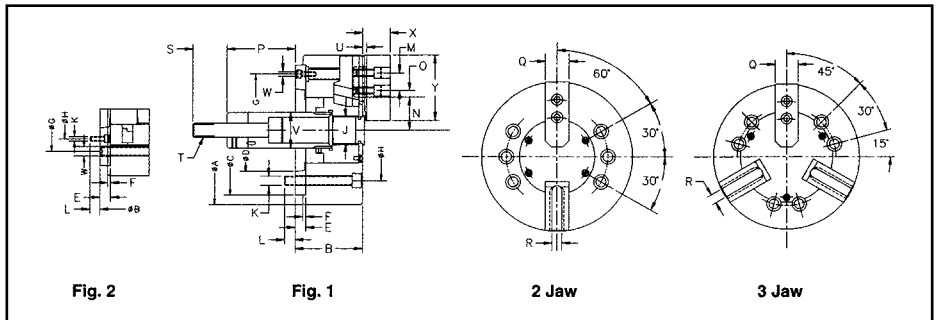
Mounting:

Direct mounting to fit ASA B5.9 type A (interchangeable with DIN 55026)

Standard Equipment:

Chuck assembled with adapter, chuck mounting bolts. T-nuts and jaw mounting bolts with wrench, draw nut wrench.

DIMENSIONAL DRAWINGS



DIMENSIONS (Dimension in inches)

MODEL	NL/NLT-06A05	NL/NLT-08A06	NL/NLT-10A06	NL/NLT-10A08	NL/NLT-12A06	NL/NLT-12A08
A	6.496	8.268	10.000	10.000	11.969	11.969
B	3.307	3.346	3.504	3.504	4.173	4.173
C (H6)	5.512	6.693	8.661	8.661	8.661	8.661
D	3.251	4.188	4.188	5.501	4.188	5.501
E	0.591	0.669	0.787	0.709	0.787	0.709
F	0.197	0.197	0.197	0.197	0.236	0.236
G	4.567	5.906	6.748	7.480	6.748	7.480
H	4.126	5.252	6.748	6.748	6.748	6.748
K	6-M10	6-M12	6-M16	6-M16	6-M16	6-M16
L	0.551	0.787	0.709	0.709	0.709	0.709
M	0.787	0.984	1.181	1.181	1.181	1.181
N max.	1.594	1.894	2.142	2.142	2.587	2.587
N min.	1.339	1.575	1.785	1.785	2.205	2.205
O max.	0.542	0.827	1.162	1.162	1.684	1.684
O min.	0.364	0.473	0.453	0.453	0.502	0.502
P max.	3.405	4.488	5.551	5.630	5.630	5.709
P min.	2.618	3.504	4.449	4.528	4.449	4.528
Q	1.220	1.378	1.575	1.575	1.969	1.969
R	0.472	0.551	0.630	0.630	0.630	0.630
S	1.417	1.417	1.417	1.417	1.417	1.417
T	M16x2.0	M20x2.5	M20x2.5	M20x2.5	M20x2.5	M20x2.5
U	0.157	0.197	0.197	0.197	0.197	0.197
V	1.339	1.496	1.772	1.772	1.969	1.969
W	1.378	1.654	1.811	1.811	2.126	2.126
X	1.378	1.654	1.811	1.811	2.126	2.126
Y	2.835	3.740	4.331	4.331	5.079	5.079
Fig.	1	1	2	1	2	1



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SEE PAGE 5-94

Quick Jaw-Change Chucks QB300 Series



QB300 Series

Three-jaw wedge style power chucks slash downtime and maximize productivity through unique quick change locking mechanism. Jaws can be changed in as little as 30 seconds while delivering consistent 0.0012" accuracy! QB300 Series Quick Jaw-Change chucks do not require long strike cylinders and are fully interchangeable with most power chucks.

Special Features:

- Large Thru-Hole
- 30 Second Jaw-Change
- High Accuracy and High Endurance
- Compact and Lightweight
- Direct Replacement for Most Power Chucks
- High Speed
- Expensive Base Jaws NOT Required
- Long Stroke Cylinder NOT Required

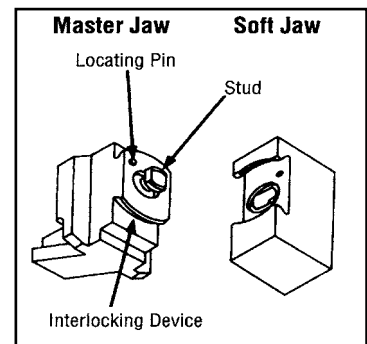
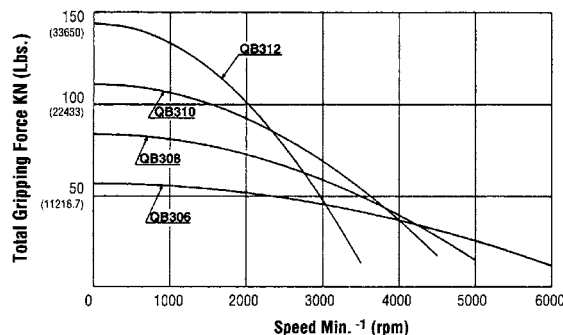
SPECIFICATIONS

MODEL	UNIT	QB306	QB308	QB310	QB312	QB315
Jaw Stroke (Diameter)	in.	0.217	0.291	0.346	0.417	0.417
Plunger Stroke	in.	0.472	0.630	0.748	0.906	0.906
Max. Draw Bar Pull Force	lbs.	4941	7637	9659	12352	15928
Max. Gripping Force	lbs.	12802	18866	24932	32343	40381
Max. Gripping Force at Max Speed	lbs.	4267	6289	8311	11013	13460
Max Speed	rpm	5500	4500	4000	3000	2300
Net Weight	lbs.	27.8	51.1	77.1	123.2	264.0
GD ²	lbs.-ft ²	5.5	16.4	30.1	70.7	-
Matching Cylinder		S1246	S1552	S1875	S2091	F2511H
Min. Gripping O.D.	in.	0.394	0.591	0.866	0.866	-
Max. Gripping O.D.	in.	5.512	7.087	8.268	9.843	-
Gripping Accuracy	in.	0.0012	0.0012	0.0012	0.0012	0.0012
Jaw Change Time (3 Jaws)	sec.	30	30	30	30	30



**MAKE SURE YOU
GREASE YOUR CHUCK
WITH CHUCK-EEZ®.**
SEE PAGE 5-94

GRIPPING CHARACTERISTIC GRAPH



Kitagawa's unique circular lock design assures positive alignment, engagement and peak accuracy.

QB300 Series (CONT'D)

Model QB300 Series Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground to assure consistent accuracy and performance.

Lubrication nipple in each base jaw.

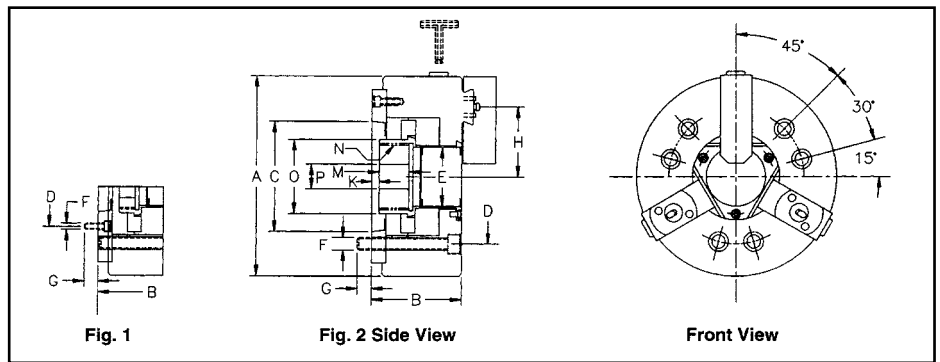
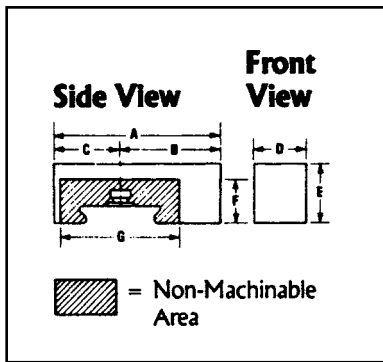
Mounting:

Direct mounting to fit ASA B5.9 type A (interchangeable with DIN 55026)

Standard Equipment:

Chuck assembled with adapter, chuck mounting bolts, wrench, draw nut wrench.

DIMENSIONAL DRAWINGS



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SEE PAGE 5-94

QUICK JAW-CHANGE CHUCK DIMENSIONS (Dimension in inches)

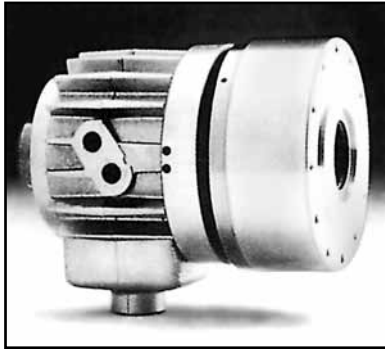
MODEL	QB306A500	QB308A600	QB310A600	QB310A800	QB312A600	QB312A800	QB315
A	6.654	8.268	10.000	10.000	11.969	11.969	15.00
B	3.583	4.055	4.724	4.449	5.079	4.803	5.236
C	3.250	4.188	4.188	5.501	4.188	5.501	-
D	4.125	5.250	5.250	6.750	5.250	6.750	9.252
E	1.772	2.047	2.953	2.953	3.583	3.583	4.626
F	6xM10	6xM12	6xM12	6xM16	6xM12	6xM16	6xM20
G	0.630	0.709	0.728	0.945	0.728	0.984	-
H max.	2.303	2.835	3.465	3.465	4.185	4.185	5.354
H min.	2.195	2.689	3.291	3.291	3.976	3.976	5.146
K max.	1.024	1.240	1.319	1.043	1.299	1.024	0.433
K min.	0.551	0.610	0.571	0.295	0.394	0.118	-0.472
M	0.591	0.650	0.787	0.787	0.906	0.906	1.299
N max.	M55x2.0	M60x2.0	M85x2.0	M85x2.0	M100x2.0	M100x2.0	M130x2.0
O	2.362	2.598	3.701	3.701	4.252	4.252	5.472
P	0.787	1.181	1.772	1.772	1.969	1.969	2.362

QB310A06 and QB312A06 are referred to in Fig. 1. Draw nut is supplied without thread.

SOFT TOP JAW DIMENSIONS (Dimension in inches)

MODEL	6" SB06BB	6" SB06BB-40	8" SB08BB	8" SB08BB-56	10" SB10BB	10" SB108BB-60	12" SB12BB	12" SB12BB-70
A	3.543	3.543	4.173	4.173	4.921	4.921	5.472	5.472
B	2.126	2.126	2.520	2.520	2.992	2.992	3.543	3.543
C	1.417	1.417	1.654	1.654	1.929	1.929	1.929	1.929
D	1.260	1.260	1.457	1.457	1.654	1.694	1.969	1.969
E	1.181	1.575	1.496	2.205	1.654	2.362	1.969	2.756
F	0.945	0.945	1.102	1.102	1.220	1.220	1.339	1.339
G	2.677	2.677	2.992	2.992	3.465	3.465	3.622	3.622
Min Gripping OD	0.394	0.394	0.591	0.591	0.866	0.866	1.181	1.181

FH & FHP Series Hydraulic Cylinders



FH Series



Coolant Collector

Designed to meet the demands of today's high speed CNC bar and chucking lathes. They feature precision finished piston bores and cool running rotary unions for years of trouble-free performance.

Special Features:

- High Speed
- Long Piston Stroke
- Efficient Cooling at High Speeds
- Built-in Check Valves and Pressure Relief Valves
- Long Life and High Endurance

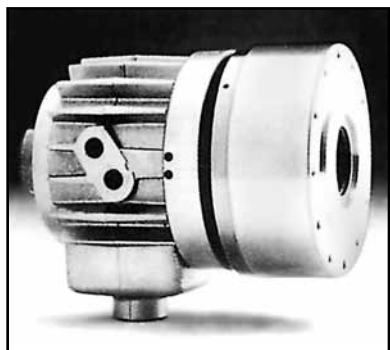
SPECIFICATIONS

MODEL	UNIT	F0933H**	F1236H**	F1546H**	F1768H**	F2078H**	F2511H	F2511HP
Bore	in.	1.299	1.417	1.811	2.677	3.071	4.626	4.626
Piston Stroke	in.	0.472	0.472	0.630	0.748	0.906	0.906	1.969
Piston Area-Pull Side	in. ²	8.25	15.97	24.09	28.47	36.50	52.20	52.20
Piston Area-Push Side	in. ²	8.522	16.01	24.91	28.55	37.77	54.00	54.00
Max. Draw Bar Pull-Side	lbs.	4935	8150	12115	14317	18502	26432	26432
Max. Draw Bar Push-Side	lbs.	4620	8150	12555	14317	19163	27533	27533
Max. Operation Pressure	psi	570	570	570	570	570	570	570
Max. Speed	rpm	8000	6700	6000	4500	3500	2800	2800
GD ²	lbs. • ft. ²	0.8	2.1	5.5	10.0	14.5	42.2	45.0
Net Weight	lbs	18.7	28.6	48.5	74.9	96.9	132.2	138.8
Oil Leakage*	gal/min.	0.7	0.8	1.0	1.0	1.0	2.0	2.0

* The oil leakage rate is reached if the cylinder is used at an operating pressure of 427 psi at oil temperature of 122° F.

** Items out of production.

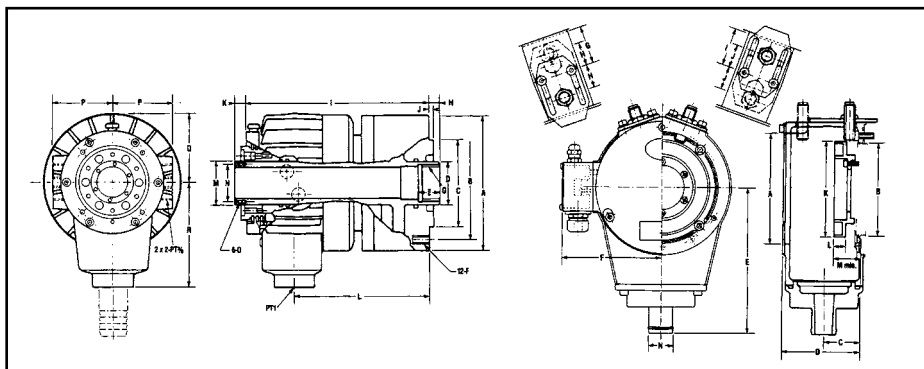
FH & FHP Series (CONT'D)



FH Series

FH & FHP SERIES HYDRAULIC CYLINDERS

FH & FHP SERIES COOLANT COLLECTORS



HYDRAULIC CYLINDERS DIMENSIONS (Dimensions in inches)

MODEL	F0933H**	F1236H**	F1546H**	F1768H**	F2078H**	F2511H	F2511HP
A	4.921	6.102	7.480	8.465	9.449	12.205	12.205
B	3.937	5.118	6.693	7.480	8.465	10.827	10.827
C	3.150	3.937	5.118	6.299	7.087	9.055	9.055
D	1.772	1.969	2.559	3.346	3.937	5.512	5.512
E	0.984	0.984	1.181	1.181	1.378	1.772	1.772
F	M8	M10	M10	M10	M12	M16	M16
G	M38x1.5	M42x1.5	M55x2.0	M75x2.0	M90x2.0	M130x2.0	M130x2.0
H max.	0.472	0.472	0.630	0.945	0.906	0.945	1.811
H min.	Ø	0	0	0.197	0	0.039	-0.157
I	7.480	8.346	9.843	10.866	11.654	12.205	13.268
J	0.197	0.197	0.197	0.197	0.197	0.236	0.236
K max.	1.614	0.984	1.142	1.142	1.496	1.496	2.559
K min.	1.142	0.512	0.512	0.394	0.591	0.591	0.591
L	5.591	6.181	7.126	7.697	8.228	8.543	9.606
M	M39x1.5	1.953	2.346	3.331	3.724	5.299	5.299
N	-	1.693	2.087	3.031	3.425	5.000	5.000
O	-	M4	M4	M5	M5	M5	M5
P	2.520	2.717	3.071	3.937	4.232	4.921	4.921
Q	-	3.150	3.586	4.331	4.626	5.335	5.335
R	4.331	4.724	5.118	6.496	7.283	8.465	8.465

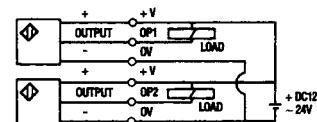
** Items out of production.

COOLANT COLLECTORS DIMENSIONS (Dimensions in inches)

MODEL	CS-F09BN	CS-F12BN	CS-F15BN	CS-F17BN	CS-20HW	CS-25HW
A	3.819	3.819	4.488	6.063	6.535	7.874
B	2.874	3.346	3.780	4.764	5.472	7.047
C	1.535	1.535	1.535	1.575	1.969	1.969
D	3.150	3.228	3.228	3.386	4.000	4.000
E	5.512	5.512	5.906	7.480	8.465	9.252
F	3.622	3.622	4.016	4.921	5.098	5.827
G	1.535	1.535	1.535	1.693	2.323	2.638
H	0.445	0.945	0.945	1.102	1.024	0.709
I	1.535	1.535	1.535	1.693	1.693	1.693
J	0.945	0.945	0.945	1.102	1.024	1.024
K	3.307	3.307	3.898	5.669	6.043	7.559
L	0.472	0.472	0.472	0.472	0.472	0.472
M min.	1.142	1.181	1.181	1.181	1.378	1.378
N	-	1.024	1.024	1.024	1.024	1.024
CYL	F0933H	F1236H	F1546H	F1768H	F2078H	F2511H(P)

SPECIFICATION OF PROXIMITY SWITCHES

Power Supply	DC12-24V
Switching Capacity	200mA
Output Form	NPN



Standard Coolant (without proximity switch) are also available.

S & SL Series Hydraulic Cylinders



S Series



Coolant Collector

Compact and lightweight, they feature up to 20% larger bar capacity and speed than conventional cylinders. Precision finished piston bores and cool running rotary unions are included for years of trouble-free performance.

Special Features:

- Extra Large Bore
- High Speed
- Long Piston Stroke
- Efficient Cooling at High Speeds
- Built-in Check Valves and Pressure Relief Valves
- Long Life and High Endurance

SPECIFICATIONS

MODEL	UNIT	S1246	S1552	S1875	S2091	S2816	S1246L	S1552L	S1875L	S2091L	S2816L
Bore	in.	1.811	2.047	2.953	3.583	6.496	1.811	2.047	2.953	3.583	6.496
Piston Stroke	in.	0.591	0.866	0.984	1.181	1.181	1.260	1.339	1.575	1.96	2.008
Piston Area-Pull Side	in. ²	13.87	23.27	28.44	36.41	51.46	13.87	23.27	28.44	36.41	51.46
Piston Area-Push Side	in. ²	15.59	25.00	30.63	38.97	58.34	15.59	25.00	30.63	38.97	58.34
Max. Draw Bar Pull-Side	lbs.	7048	12115	14758	18943	20414	7048	12115	14758	18943	20414
Max. Draw Bar Push-Side	lbs.	8150	12996	15859	20264	23107	8150	12996	15859	20264	23107
Max. Operation Pressure	psi	570	570	570	570	435	570	570	570	570	435
Max. Speed	rpm	7000	6200	4700	3800	1700	7000	6200	4700	3800	1700
GD ²	lbs.·ft. ²	1.8	5.0	9.0	14.5	68.7	2.1	5.5	9.5	14.7	68.7
Net Weight	lbs	26.4	37.0	57.3	72.7	20.7	28.2	37.4	59.0	73.6	22.2
Oil Leakage*	gal/min.	0.8	1.0	1.1	1.2	1.7	0.8	1.0	1.1	1.2	1.7

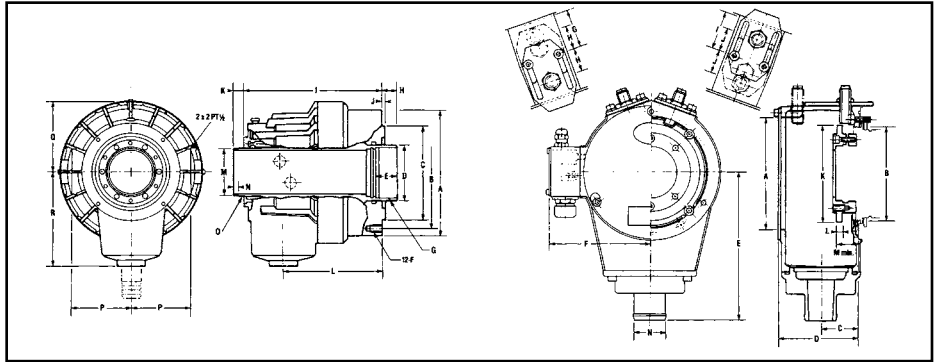
* This oil leakage rate is reached if the cylinder is used at an operating pressure of 427 psi at oil temperature of 122° F.

S & SL Series (CONT'D)



S Series

S & SL SERIES HYDRAULIC CYLINDERS



S & SL SERIES COOLANT COLLECTORS

HYDRAULIC CYLINDERS DIMENSIONS (Dimensions in inches)

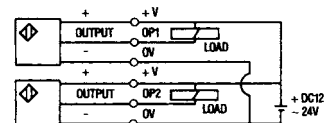
MODEL	S1246	S1552	S1875	S2091	S2816	S1246L	S1552L	S1875L	S2091L	S2816L
A	6.102	7.480	8.465	9.449	12.795	6.102	7.480	8.465	9.449	12.795
B	5.118	6.693	7.480	8.465	11.417	5.118	6.693	7.480	8.465	11.417
C	3.937	5.118	6.299	7.087	10.236	3.937	5.118	6.299	7.087	10.236
D	2.559	2.756	3.740	4.331	7.480	2.559	2.756	3.740	4.331	7.480
E	1.181	1.181	1.378	1.378	1.772	1.181	1.181	1.378	1.378	1.772
F	M10	M10	M10	M12	M16	M10	M10	M10	M12	M16
G	M55x2.0	M60x2.0	M85x2.0	M100x2.0	M180x3.0	M55x2.0	M60x2.0	M85x2.0	M100x2.0	M180x3.0
H max.	0.591	0.866	0.984	1.378	1.181	1.063	1.142	1.378	1.771	2.008
H min.	0	0	0	0	0	-0.197	-0.197	-0.197	-0.197	0
I	7.047	7.520	8.858	9.764	12.913	7.874	8.189	9.488	10.551	14.567
J	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197
K max.	1.575	1.850	1.969	2.165	2.165	2.244	2.323	2.559	2.953	2.442
K min.	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.984	0.484
L	5.315	5.709	6.555	7.205	9.252	6.142	6.378	7.185	7.992	10.906
M	1.969	2.205	3.189	3.780	6.496	1.969	2.205	3.189	3.780	6.496
N	0.354	0.354	0.354	0.354	0.354	0.354	0.354	0.354	0.354	0.354
O	M52x1.5	M58x1.5	M84x2.0	M99x2.0	M173x3.0	M52x1.5	M58x1.5	M84x2.0	M99x2.0	M173x3.0
P	2.992	3.386	3.976	4.331	6.378	2.992	3.386	3.976	4.331	6.378
Q	3.937	4.331	4.764	5.256	5.551	3.937	4.331	4.764	5.256	5.551
R	4.528	5.118	6.299	7.283	9.843	4.528	5.118	6.299	7.283	9.843

COOLANT COLLECTORS DIMENSIONS (Dimensions in inches)

MODEL	CS-S12BN	CS-S15BN	CS-S18BN	CS-S20BN	CS-S28BN
A	3.819	4.488	6.063	6.063	9.843
B	3.346	3.780	4.764	5.433	-
C	1.535	1.535	1.575	2.283	2.047
D	3.228	3.228	3.386	4.016	4.044
E	5.512	5.906	7.480	7.480	11.220
F	3.622	4.016	4.921	4.921	-
G	1.535	1.535	1.693	2.047	2.343
H	0.945	0.945	1.102	1.181	1.437
I	1.535	1.535	1.693	2.047	2.343
J	0.945	0.945	1.102	1.181	1.437
K	3.307	3.898	5.669	5.669	9.528
L	0.197	0.197	0.197	0.197	0.276
M min.	0.906	0.906	0.906	1.181	-
N	1.299	1.299	1.299	1.299	1.102
CYL	S1246	S1552	S1875	S2091	S2516
	S1246L	S1552L	S1875L	S2091L	S2816L

SPECIFICATION OF PROXIMITY SWITCHES

Power Supply	DC12-24V
Switching Capacity	200mA
Output Form	NPN



Standard Coolant (without proximity switch) are also available.

YR & YRE Series Hydraulic Cylinders

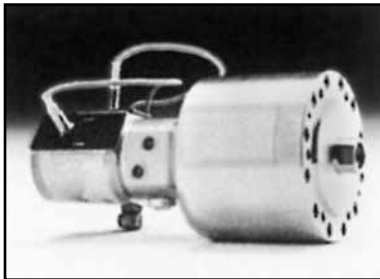


YR Series

Closed center hydraulic cylinders feature high speed and long stroke option for use with all closed center chucks with speeds up to 6000 RPM.

Special Features:

- Safety check valves to ensure safety in the event of hydraulic failure
- Safety pressure relief valve to prevent damage to cylinders in the event of over pressure
- High speed, compact and lightweight
- Maintenance free design



YRE Series

SPECIFICATIONS

MODEL	UNIT	Y1020R(E)	Y1225R(E)	Y1530R(E)	Y2035R(E)
Piston Stroke	in.	0.787	0.984	1.181	1.378
Piston Area-Pull Side	in. ²	12.3	17.5	24.8	45.0
Piston Area-Pull Side	in. ²	13.3 (13.0)	18.9 (18.6)	27.3 (27.0)	48.7 (48.4)
Max. Draw Bar Pull Force	lbs.	6505	9423	13460	24229
Max. Operation Pressure	psi	570	570	570	570
Oil Leakage Rate*	gal/min.	0.2	0.2	0.2	0.2
Max. Speed	rpm	6000	6000	5500	5500
Net Weight	lbs	16 (17)	22 (23)	30 (31)	49 (50)
GD ²	lbs. • ft. ²	1.2	2.1	4.5	9.2

(E) Designated stroke detection option using detector plates and proximity switches.

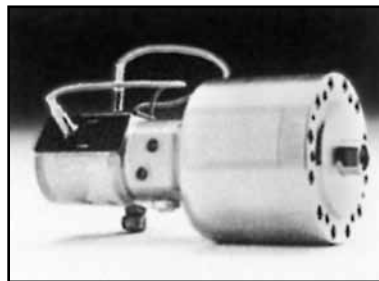
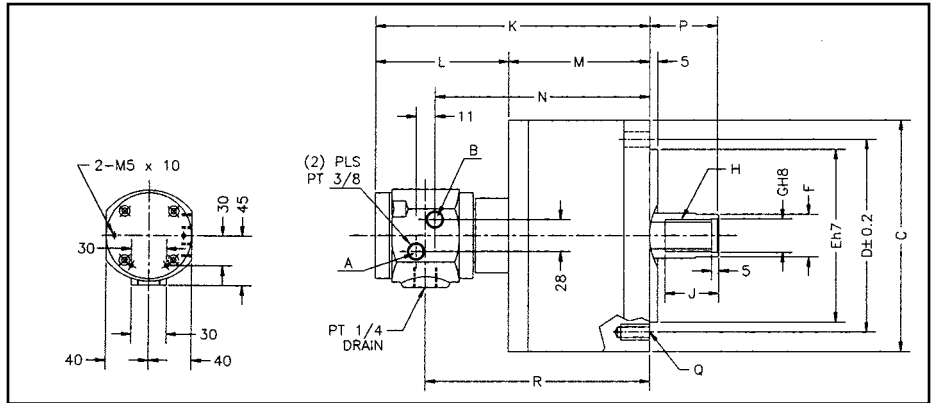
* Oil leakage rate is based on operating pressure of 435 psi at oil temperature of 122° F.

YR & YRE Series (CONT'D)



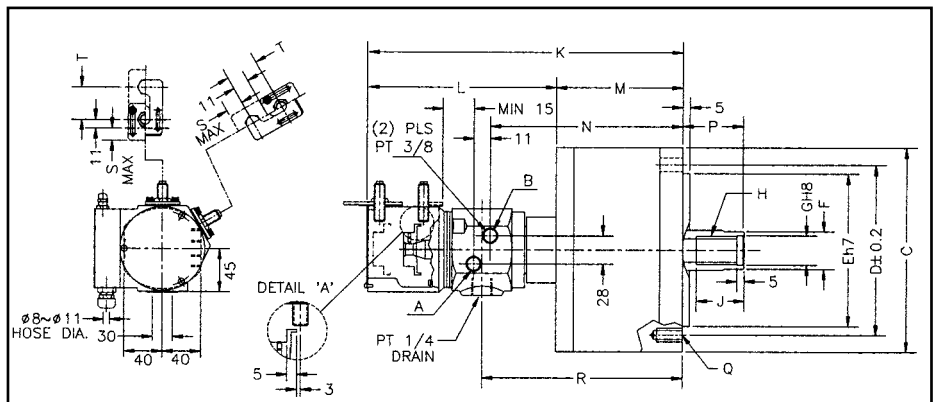
YR Series

YR DIMENSIONAL DRAWING



YRE Series

YRE DIMENSIONAL DRAWING



DIMENSIONS (Dimensions in Inches)

MODEL	Y1020R(E)	Y1225R(E)	Y1530R(E)	Y2035R(E)
A (Piston Diameter)	4.134	4.921	5.906	7.874
B (Stroke)	0.787	0.984	1.181	1.378
C	5.315	6.299	7.480	9.646
D	3.937	5.118	5.118	5.709
E	3.150	4.331	4.331	4.724
F	1.181	1.378	1.772	2.165
G	0.827	0.984	1.220	1.457
H	M20	M24	M30	M36
J	1.378	1.732	1.772	2.362
K	7.756 (9.921)	8.071 (10.236)	8.425 (10.591)	8.976 (11.339)
L	4.252(6.417)	4.252 (6.417)	4.252 (6.417)	4.173 (6.535)
M	3.504	3.819	4.173	4.803
N	5.984	6.299	6.654	7.205
P max.	1.772	2.008	2.205	2.717
P min.	0.984	1.024	1.024	1.339
Q min.	6-M10x20	6-M12x24	12-M12x24	12-M16x30
R	6.220	6.535	6.890	7.441
S	(0.906)	(0.906)	(0.906)	(1.102)
T	(1.614)	(1.614)	(1.614)	(1.811)

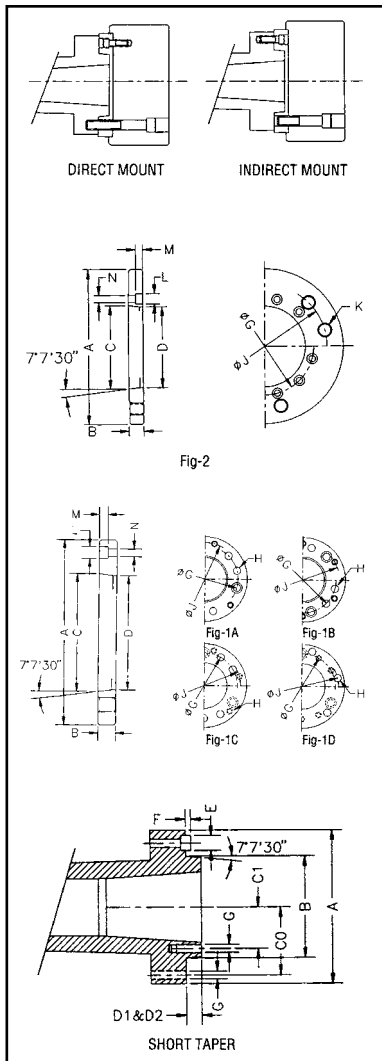
Chuck Adapters

Chuck Adapter Plates ASA B5.9 TYPE A (Interchangeable DIN 55026)



Chuck Adapter Series

DIMENSIONAL DRAWINGS



SPINDLES

MODEL	NOSE	5	6	8	11	15
N	6	CB-06A05				
	8	CN-08A05	CB-08A06			
	10		CN-10A06	CB-10A08		
	12		CN-10A06	CB-10A08		
NLT	6	CBT06A05				
	8	CNT08A05	CBT08A06			
	10		CBT10A06	CBT10A08		
	12		CBT10A06	CBT10A08		
B	6	CB-06A05				
	8	CB-08A05	CB-08A06			
	10		CB-10A06	CB-10A08		
	12		CB-10A06	CB-10A08		
	15			CB-15A08	CB-15A11	
	18			CB-18A08	CB-18A11	
	21				CB-21A11	CB-21A15
	24				CB-21A11	CB-21A15
BT	6	CBT06A06				
	8	CBT08A05	CBT08A06			
	10		CBT10A06	CBT10A08		
	12		CBT10A06	CBT10A08		
	15			CBT15A08	CBT15A11	
B-200	6	CB-06A05				
	8	CB-08A05	CB-08A06			
	10		CB-10A06	CB-10A08		
BL-200	12		CB-10A06	CB-10A08		
	6	CBT06A05				
	8	CBT08A05	CBT08A06			
BT-200	10		CBT10A06	CBT10A08		
	12		CBT10A06	CBT10A08		

DIMENSIONS (Dimensions in Inches)

MODEL	CB06A05	CB08A05	CB08A06	CB10A06	CB10A08	CB15A08	CB15A11	CB18A08	CB18A11	CB21A11	CB21A15	CN10A06
SPINDLE NOSE	A2-5	A2-5	A2-6	A2-6	A2-8	A2-8	A2-11	A2-8	A2-11	A2-11	A2-15	A2-6
A	5.512	6.693	6.693	8.661	8.661	11.811	11.811	14.961	14.961	14.961	14.961	7.874
B	0.591	0.866	0.669	0.984	0.709	1.299	0.866	0.866	1.614	1.063	0.787	0.787
C	3.250	3.250	4.188	4.188	5.501	5.501	7.751	5.501	7.751	7.751	11.25	4.188
D	3.138	3.138	4.055	4.055	5.354	5.512	7.563	5.512	7.563	7.563	9.921	4.055
E	0.641	0.641	0.766	0.766	0.953	0.953	1.156	0.953	1.156	1.156	1.406	0.766
F	0.256	0.256	0.256	0.256	0.315	0.315	0.394	0.315	0.394	0.394	0.394	0.256
G	4.125	4.125	5.250	5.250	6.750	6.750	9.252	6.750	9.252	9.252	13.000	5.250
H	0.472	0.433	0.531	0.531	0.669	0.669	0.827	0.669	0.827	0.827	0.945	0.531
J	4.567	5.250	5.906	6.750	7.480	9.252	10.236	9.252	12.598	13.000	13.000	6.750
K	-	M12	-	M16	-	M20	-	M20	-	M22	-	M16
L	0.433	0.669	0.433	0.787	0.551	0.984	0.669	0.984	0.669	1.260	0.787	0.787
M	0.276	0.433	0.276	0.531	0.394	0.669	0.433	0.669	0.433	0.827	0.591	0.315
N	0.260	-	0.260	-	0.354	-	0.433	-	0.433	-	0.531	-
Fig.	1A	2	1B	2	1C	2	1C	2	1C	2	1D	2

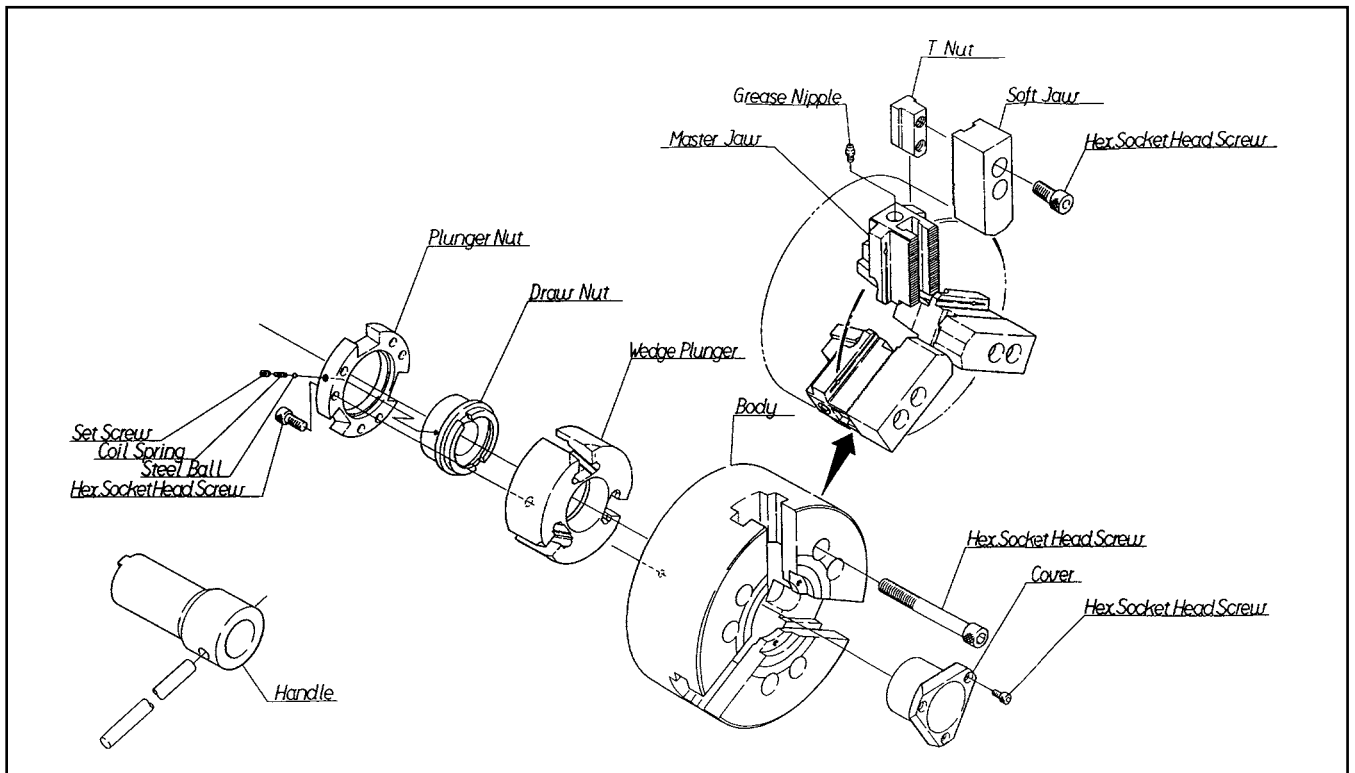
For ASA 58.9 Type A (Interchangeable DIN 55026) Spindles

SHORT TAPER SPINDLE NOSE STANDARDS (Standards in Inches)

SPINDLE NOSE SIZE NO	A2-5	A2-6	A2-8	A2-11	A2-15
Outside Diameter	A	5.236	6.496	8.268	11.024
Max. Taper Diameter	B	3.251	4.188	5.501	7.751
P.C.R. Outer Bolts	C0	2.063	2.626	3.374	4.626
P.C.R. Inner Bolts (A1 Only)	C1	1.219	1.626	2.187	3.250
Spigot Height (A1 Only)	D1	0.563	0.625	0.687	0.750
Spigot Height (A2 Only)	D2	0.512	0.551	0.630	0.709
Driving Stud Diameter	E	0.626	0.750	0.937	1.126
Driving Stud Height	F	0.197	0.197	0.236	0.315
Bolt Hole Size	G	M10	M12	M16	M18

Type A1 and A2 ASA B5.9 Type A, DIN 55026, ISO B702 Part 1, BS 4442 Part1.

TYPICAL CHUCK



TYPICAL CYLINDER

