

# SPECIAL CHUCKS

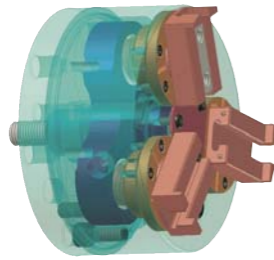


PBL (Universal Ball-Lock Power Chuck)	6.	PHD (Outside Pull-Down Chuck)	20.
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# PBL

## Universal Ball-Lock Power Chuck

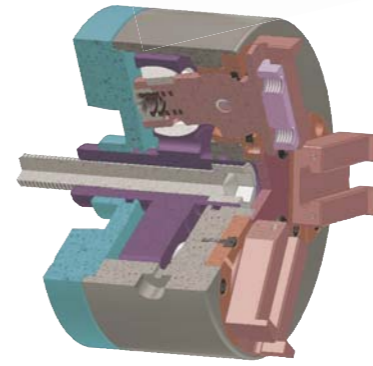
- Castings or forgings can be O.D. or I.D. clamped
- Grips on taper up to 10°
- Jaws pivot up to 5° to grip on uneven surfaces
- Ideal for shaft machining
- Active pull-down for high precision



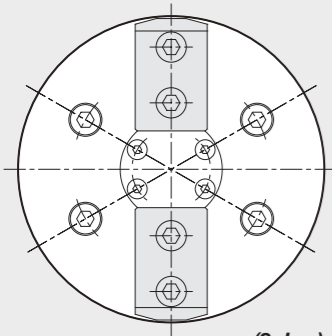
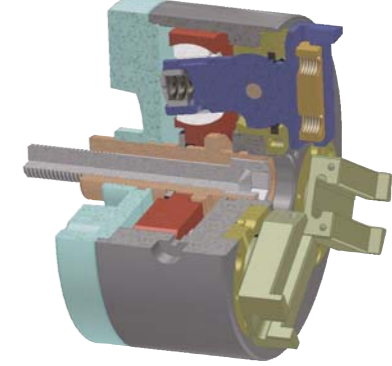
**SPECIAL CHUCK**



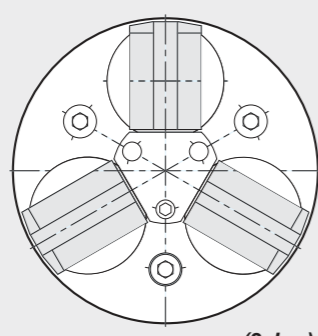
**Centralizing**



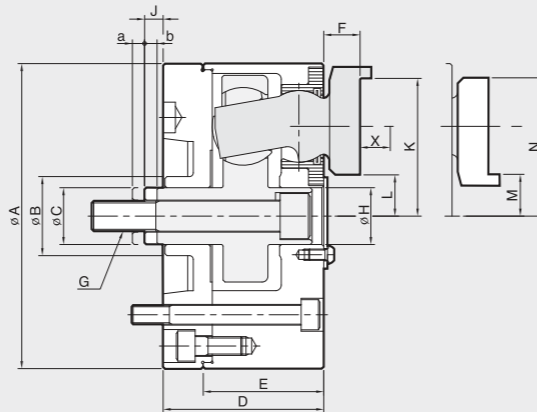
**Compensating**



(2-Jaw)



(3-Jaw)



### Dimensions

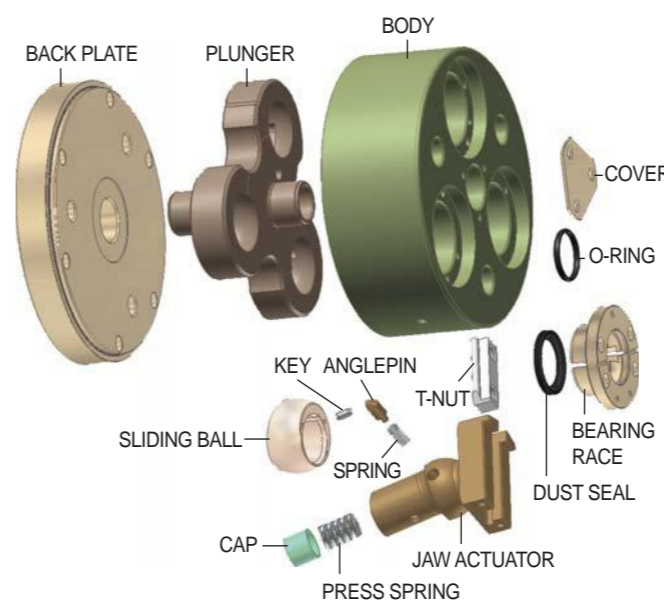
	ΦA	ΦB min.	ΦC	D	E	F	G	ΦH	J	a	b	K	L	M	N	X
PBL-06	162	40	30.16	85.2	59.2	19.3	M16	30.170	10.6	5.1	6.2	73.15	20.3	22.1	75	24.9
PBL-08	200	45	31.75	100	70	23.3	M16 (M18)	31.760	10.4	8	6.4	88.95	25.3	25.35	89	29.4
PBL-10	254	58	41.27	118	86.6	29.1	M18 (M22)	41.285	13.5	8	9.5	112.7	30.2	30.3	112.8	36.5
PBL-12	300	58	41.27	118	86.6	29.1	M18 (M22)	41.285	13.5	8	9.5	133.27	50.87	50.77	133.37	36.5
PBL-15	381	83	57.16	131	96.1	32.4	M24 (M27)	57.160	24.7	10.3	12	171.45	65.8	69.8	175.46	41.9
PBL-18	457	120.7	88.9	131	96.1	32.4	M30	88.900	31.7	10.3	12	209.55	103.9	107.9	213.6	41.9
PBL-21	533	120.7	88.9	131	96.1	32.4	M30	88.900	31.7	10.3	12	247.65	142	146	252	41.9
PBL-24	610	-	80	131	100.9	32.4	M30	88.900	31.7	10.3	12	285.8	180.2	184.2	289.81	41.9

### Specifications

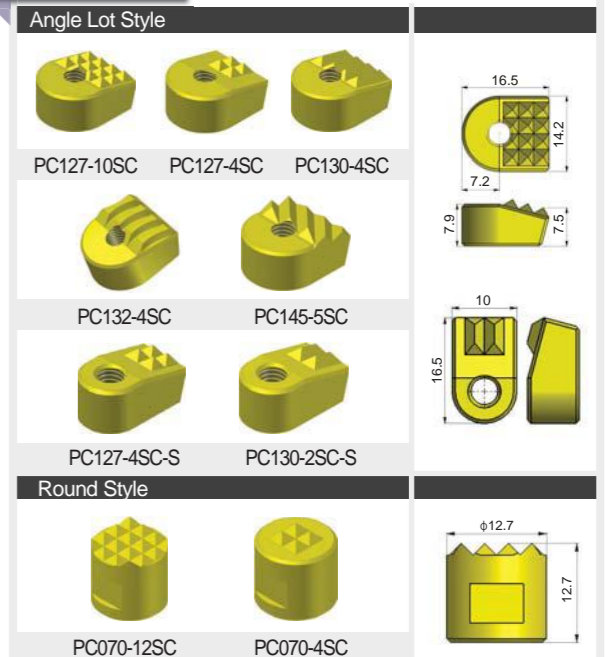
Type	Max. Clamping Force	Max. Drawbar Pull	Jaw Stroke Dia.	Plunger Stroke	Clamping Range		Max. Speed	Weight	GD <sup>2</sup>
					Outside Dia.	Inside Dia.			
PBL-06	6600	2200	7.9	11.3	12.7-120	70-152	4000	18.0	0.15
PBL-08	8700	*2900	9.5	14.3	16-152	76-203	3500	27.0	0.48
PBL-10	10800	*3600	12.7	17.5	50-203	85-235	2500	45.0	1.23
PBL-12	10800	*3600	12.7	17.5	63-241	127-305	2000	67.5	2.42
PBL-15	16500	*5500	15.8	22.3	76-317	165-381	1800	84.5	8.49
PBL-18	16500	5500	15.8	22.3	89-394	241-457	1500	120.0	15.17
PBL-21	16500	5500	15.8	22.3	162-470	317-533	1000	180.0	25.00
PBL-24	16500	5500	15.8	22.3	180-520	350-600	1000	290	25

※ \*When "G" applies to ( ) specification, "Max. Drawbar Pull" has the above specification.

### PBL Components



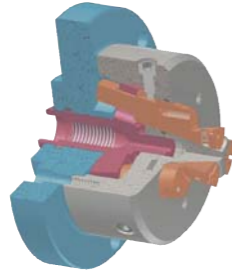
### Inserts



# PIL

## Inside Pin Arbor Chuck

- Ideal for second operation I.D. gripping
- Active pull-down for high precision
- Counter-centrifugal gripping reduces distortion

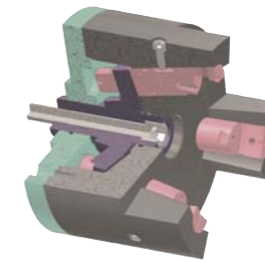


**SPECIAL CHUCK**

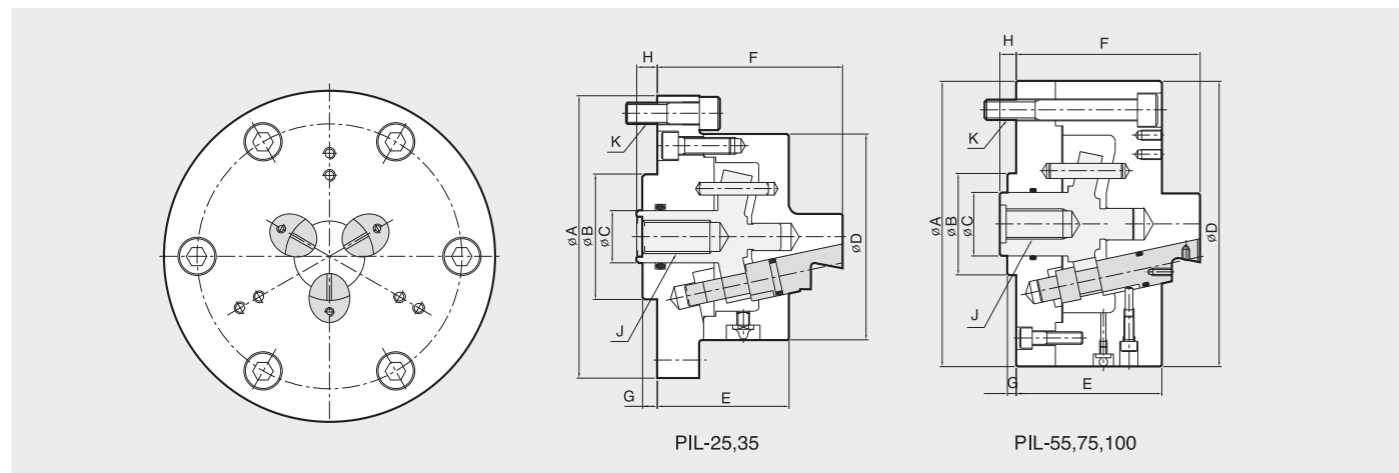
# POL

## Outside Pin Arbor Chuck

- Ideal for second operation O.D. gripping
- Active pull-down for high precision
- Counter centrifugal gripping reduces distortion

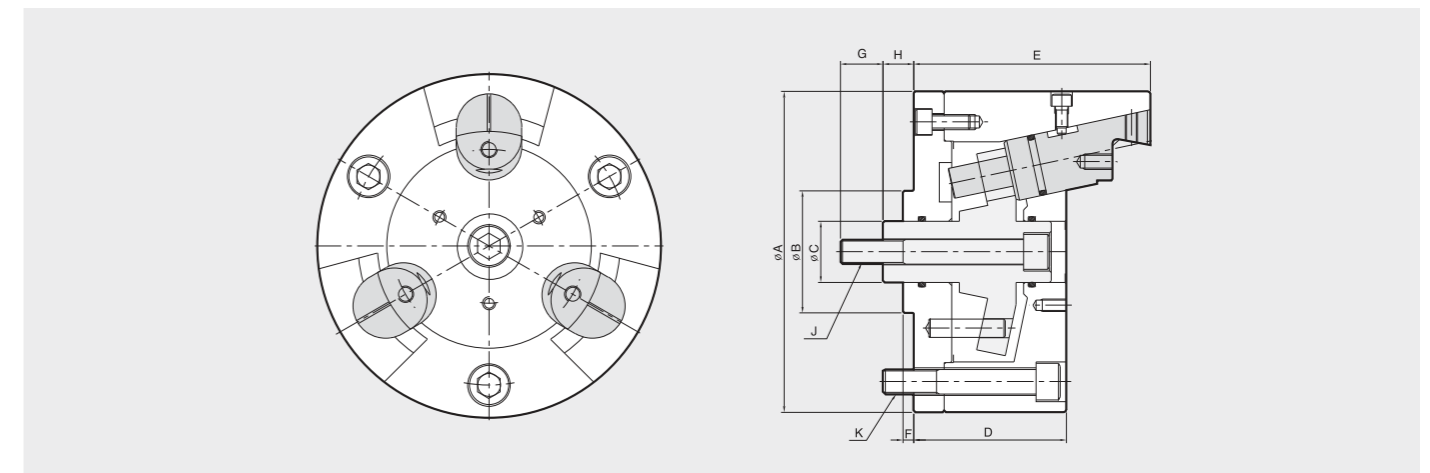


**SPECIAL CHUCK**



PIL-25,35

PIL-55,75,100



### Dimensions

	ΦA	ΦB(h7)	ΦC	ΦD	E	F	G	Hmax.	Hmin.	J	K
PIL-25	135	60	20	85	60	80	7	12	8	M12	3-M10 PCD118
PIL-35	135	60	25	100	63	88.5	7	12	8	M16	3-M10 PCD118
PIL-55	190	80	32	190	93	120	7	18	8	M16	3-M16 PCD150
PIL-75	225	80	50	225	115	145	7	18	8	M24	6-M16 PCD180
PIL-100	270	120	50	270	130	170	7	23	13	M24	6-M16 PCD180

### Specifications

Type	Max. Clamping Force [kgf]	Max. Drawbar Pull [kgf]	Jaw Stroke Dia. [mm]	Plunger Stroke [mm]	Clamping Range		Max. Speed [r.p.m.]	Weight [kg]	GD <sup>2</sup> [kgf.m <sup>2</sup> ]
					Pin Jaw	Top Jaw			
PIL-25	2250	1200	1.7	4	17-25	-	5000	3.5	0.013
PIL-35	3380	1800	1.7	4	25-40	48-60	4500	4.3	0.026
PIL-55	5640	3000	4.2	10	35-55	62-90	3500	18.4	0.33
PIL-75	7150	3800	4.2	10	55-76	85-130	2500	35	0.88
PIL-100	7150	3800	4.2	10	80-110	120-180	2000	55	2.0

### Dimensions

	ΦA	ΦB(h7)	ΦC	ΦD	E	F	G	Hmax.	Hmin.	J	K
POL-80	130	60	24	72	103	5	20	18	10	M12	3-M8 PCD100
POL-100	162	80	30	90	130	7	30	22.5	12.5	M16	3-M12 PCD130
POL-140	210	80	40	100	155	7	30	25	15	M16	3-M16 PCD170
POL-180	250	80	45	110	165	7	30	25	15	M18	3-M16 PCD210
POL-230	320	120	50	130	200	7	40	30	20	M20	6-M16 PCD270
POL-300	400	-	60	137	248	7	40	25	15	M35	M24

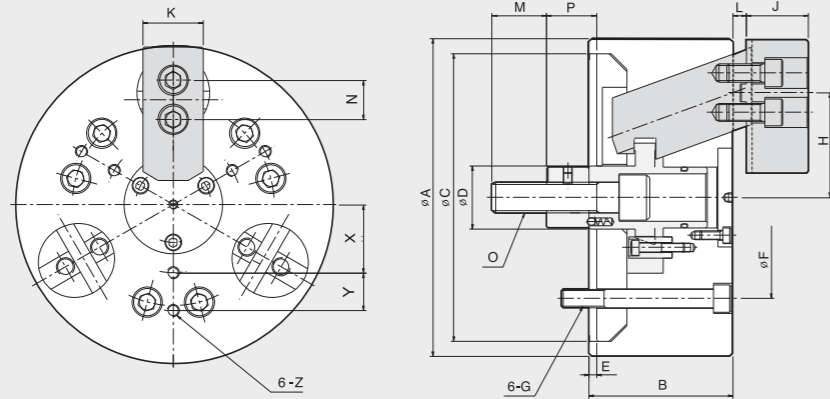
### Specifications

Type	Max. Clamping Force [kgf]	Max. Drawbar Pull [kgf]	Jaw Stroke Dia. [mm]	Plunger Stroke [mm]	Clamping Range		Max. Speed [r.p.m.]	Weight [kg]	GD <sup>2</sup> [kgf.m <sup>2</sup> ]
					Pin Jaw	Top Jaw			
POL-80	2250	1200	3.4	8	65-80	15-60	5000	8	0.067
POL-100	3760	2000	4.2	10	86-100	20-80	4500	16	0.2
POL-140	4700	2500	4.2	10	120-140	60-110	3000	27	0.54
POL-180	5640	3000	4.2	10	150-180	100-145	2000	46	1.43
POL-230	7520	4000	4.2	10	-	120-200	2000	70	3.5
POL-300	7520	4000	4.2	10	-	150-270	2000	165	5.6

# DDL

## Outside Draw-Down Chuck

- Workpiece pulled down to location for superior accuracy
- Very accurate for parallel and perpendicular surfaces
- Interchangeable top jaws facilitate work on multiple workpieces
- Sealed to prevent chips and coolant from entering the chuck body



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	Hmax.	Hmin.	J	K	Lmax.	Lmin.	M	N	O	Pmax.	Pmin.	X	Y	Z
DDL-04	98	60	60	25	5	80	3-M8	38.25	33.25	19.5	25	10.5	3.5	20	-	M10	14	7	25	-	3-M6
DDL-05	130	70	80	28	5	100	3-M8	44	41.5	24.5	30	10.5	3.5	25	-	M12	24	17	30	-	M6
DDL-06	165	85	140	34	5	104.8	M10	58	54.4	31	35	14	4	36	-	M16	33	23	35	20	M6
DDL-08	210	95	190	40	5	133.4	M12	71	67.4	41	40	14	4	36	26	M20	38	28	45	25	M8
DDL-10	254	110	230	50	5	171.4	M16	85	79.6	49	50	19	4	46	32	M24	47	32	55	30	M8
DDL-12	304	125	230	54	5	171.4	M16	102	96.6	51	60	19	4	50	36	M27	47	32	70	35	M10
DDL-15	381	140	300	60	8	230	M20	133.6	126.4	60	70	26	6	47	40	M30	71	51	95	45	M12
DDL-20	500	150	420	95	9	360	-	180.5	171.4	71	80	32	7	49	44	-	72	47	150	50	M16

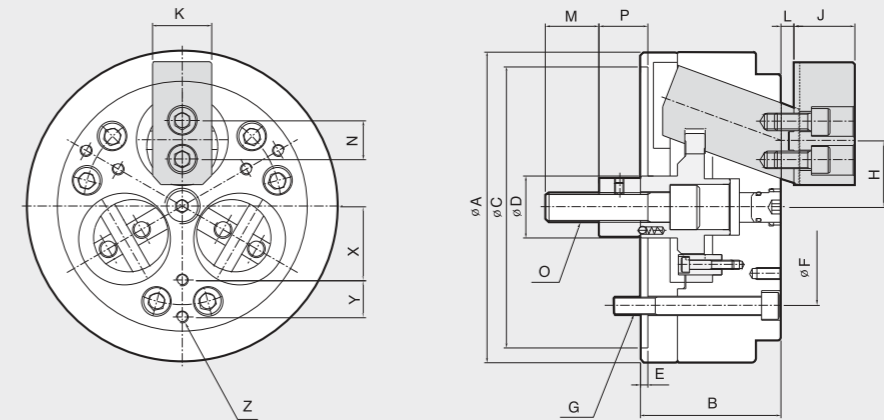
### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Jaw Stroke Dia.	Plunger Stroke Dia.	Clamping Range		Max. Speed	Weight	GD <sup>2</sup>
					Standard	Top Jaw			
DDL-04	1350	800	5	7	10-55	10-50	5500	4.5	0.05
DDL-05	2000	1000	5.0	7	15-65	15-60	3500	7.3	0.07
DDL-06	2500	1500	7.2	10	35-85	35-80	3500	14	0.18
DDL-08	4500	2500	7.2	10	40-200	40-150	3000	27	0.66
DDL-10	6000	3500	10.8	15	50-250	50-200	2500	46	1.50
DDL-12	7500	4500	10.8	15	50-300	50-250	2000	68	3.20
DDL-15	9000	5500	14.5	20	60-380	60-320	1500	110	9.00
DDL-20	23800	9100	18	28	80-450	80-400	1700	230	12

# DDO

## Inside Draw-Down Chuck

- Workpiece pulled down to location for superior accuracy
- Very accurate for parallel and perpendicular surfaces
- Interchangeable top jaws facilitate work on multiple workpieces
- Sealed to prevent chips and coolant from entering the chuck body



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	Hmax.	Hmin.	J	K	Lmax.	Lmin.	M	N	O	Pmax.	Pmin.	X	Y	Z
DDO-06	165	80	140	35	5	104.8	M10	37.9	35	30	35	12	4	36	-	M16	31	23	40	20	M6
DDO-08	210	95	190	42	5	133.4	M12	46.6	43	41	40	14	4	36	26	M20	38	28	50	25	M8
DDO-10	254	110	230	52	5	171.4	M16	57.9	52.5	46	50	19	4	46	32	M24	47	32	60	30	M8
DDO-12	304	125	230	80	5	171.4	M16	65.4	60	51	60	19	4	50	36	M27	47	32	70	40	M10
DDO-15	381	140	300	60	8	230	M20	93.6	86.4	60	70	26	6	55	40	M30	63	43	95	45	M12

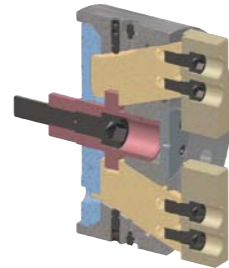
### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Jaw Stroke Dia.	Clamping Range		Max. Speed	Weight	GD <sup>2</sup>
				Standard	Top Jaw			
DDO-06	2500	1500	5.8	35-140	70-140	5000	13	0.18
DDO-08	4500	2500	7.2	40-180	90-180	4500	26	0.66
DDO-10	6000	3500	10.8	50-220	100-220	4000	44	1.50
DDO-12	7500	4500	10.8	60-270	110-220	3500	68	2.90
DDO-15	9000	5500	14.5	250-340	200-340	1500	110	6.5

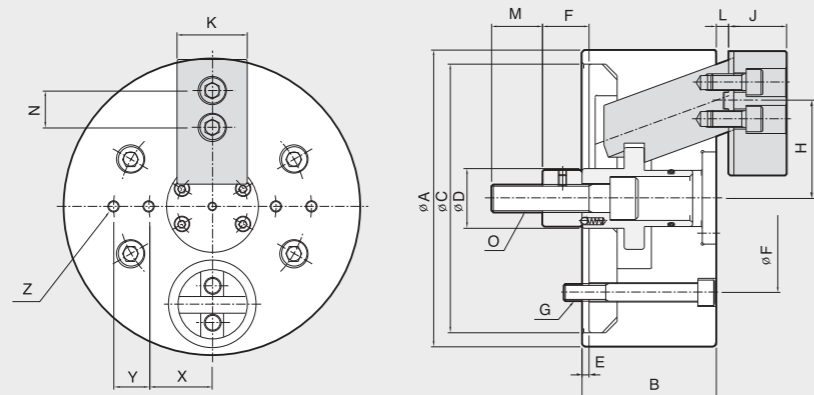
# DDT

## 2-Jaw Draw-Down Chuck

- Workpiece pulled down to location for superior accuracy
- Ideal for machining square, rectangular and irregularly-shaped components
- Very accurate for parallel and perpendicular surfaces



SPECIAL CHUCK



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	Hmax.	Hmin.	J	K	Lmax.	Lmin.	M	N	O	Pmax.	Pmin.	X	Y	Z
DDT-06	160	85	140	35	5	104.8	M10	58	54.4	31	35	18	8	36	-	M16	34	23	35	20	M6
DDT-08	210	95	190	42	5	133.4	M12	71	67.5	41	40	15	8	38	26	M20	39	28	45	25	M8
DDT-10	254	110	230	52	5	171.4	M16	85	79.9	46	50	23	9	46	32	M24	48	32	55	30	M8

### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Jaw Stroke Dia.	Plunger Stroke	Clamping Range		Max. Speed	Weight	GD <sup>2</sup>
					Standard	Top Jaw			
DDT-06	1600	1000	7.2	11.0	35-85	35-80	2500	14	0.19
DDT-08	2800	1700	7.2	11.0	40-200	40-150	2200	26	0.57
DDT-10	4000	2500	10.2	16.0	50-250	50-200	1800	42	1.50

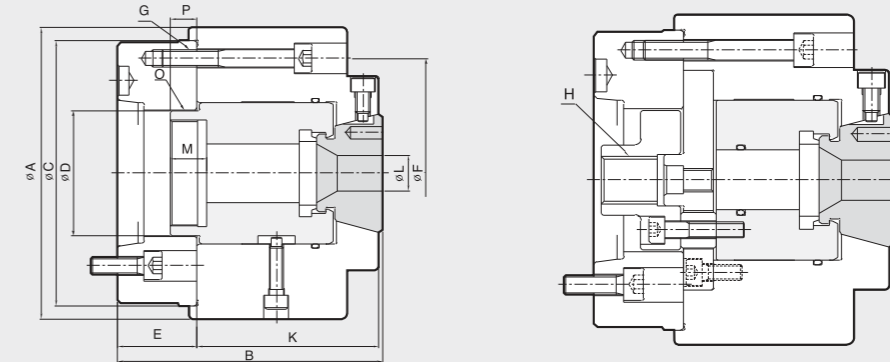
# COR

## Outside-Collet Chuck

- Quick change rubber-steel segment collet
- Ideal for bar and shaft clamping
- Round, square and hexagonal collets available



SPECIAL CHUCK



Bar Work

Chucking work

### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	H	K	ΦLmax.	ΦLmin.	M	O	Pmax.	Pmin.
COR-32	165	150	150	71	45	130	M10	M24	103	32	5	20.5	M60x2.0	16.5	13.5
COR-50	165	150	150	87	45	130	M10	M24	103	50	12	27.5	M74x1.5	23	20
COR-65	180	170	170	103	49	150	M12	M30	119	65	16	25	M90x2.0	25.5	22.5
COR-90	210	190	170	103	55	150	M12	M30	133	90	30	25	M90x2.0	28.5	22.5

### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Collect Expansion	Plunger Stroke	Chucking Dia.		Max. Speed	Weight
					Bar Work	Chuck Work		
COR-32	6400	3200	1.0	3	5-32	7-32	4500	25
COR-50	8200	4100	1.0	3	12-50	12-50	4500	25
COR-65	9200	4600	1.0	3	16-65	16-65	4000	32
COR-90	13300	6500	2.0	6	30-90	30-90	3500	38

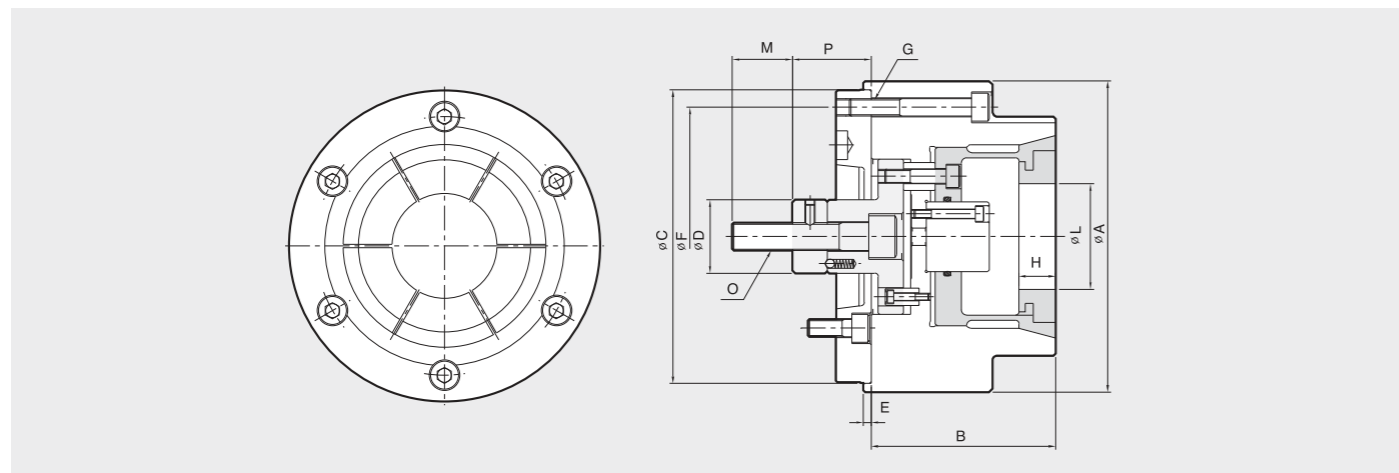
# CDO

## Outside-Collet Chuck

- Interchangeable top jaws grip the workpiece O.D.
- Workpiece is pulled down to location for high accuracy machining
- Air sensing available
- Air / Coolant through the spindle available



SPECIAL CHUCK



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	H	ΦLmax.	ΦLmin.	M	O	Pmax.	Pmin.
CDO-06	165	115	150	35	5	130	M12	30	50	15	36	M16	26	23
CDO-08	210	125	200	42	5	180	M12	35	90	80	36	M20	32	29
CDO-10	250	145	230	52	5	210	M16	45	130	80	46	M24	35	32
CDO-12	300	170	230	52	5	270	M16	50	180	100	50	M24	36	32

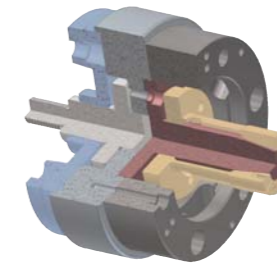
### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Jaw Stroke Dia.	Plunger Stroke	Clamping Range		Max. Speed	Weight	GD <sup>2</sup>
					Max.	Min.			
CDO-06	2800	1500	1.6	3	50	15	4500	11	0.11
CDO-08	4600	2500	1.6	3	80	40	4000	23	0.44
CDO-10	6500	3500	1.6	3	130	80	3300	49	1.76
CDO-12	7500	4000	2.0	4	180	100	2500	67	3.10

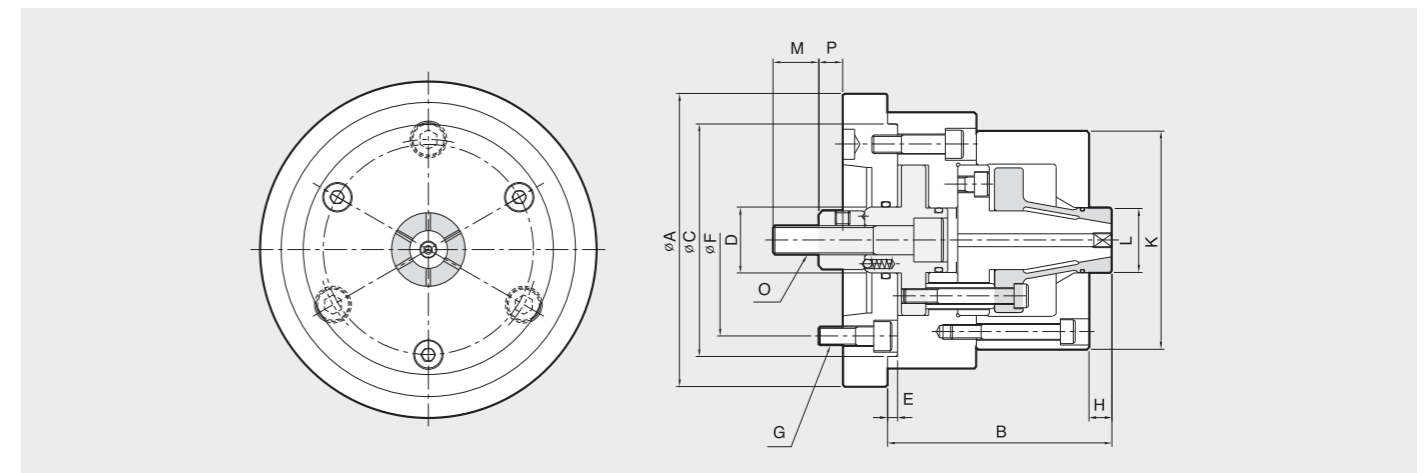
# CDI

## Inside-Clamping Mandrel

- Pulled down to location for accuracy
- Collet changes quickly for machining a variety of work pieces
- Air sensing can be added for automatic loading



SPECIAL CHUCK



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	H	ΦK	ΦLmax.	ΦLmin.	M	O	Pmax.	Pmin.
CDI-06	165	115	150	35	6	104.8	M10	15	L+25	15	40	40	M16	26	23
CDI-08	200	135	170	42	6	133.4	M12	20	L+35	90	40	45	M20	33	29
CDI-10	250	180	230	52	6	171.4	M16	35	L+40	130	90	55	M24	36	32
CDI-12	300	220	230	52	6	171.4	M16	40	L+50	180	130	55	M24	37	32

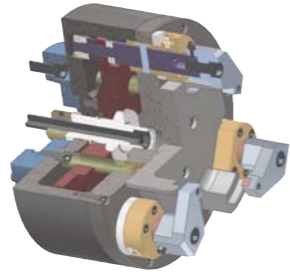
### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Collect Expansion	Plunger Stroke	Chucking Dia.		Max. Speed	Weight	GD <sup>2</sup>
					Max.	Min.			
CDI-06	4000	1500	0.8	3	40	15	4500	7	0.06
CDI-08	7000	2500	1.0	4	90	40	4000	14	0.19
CDI-10	12000	4000	1.0	4	130	90	3300	34	0.71
CDI-12	15000	4800	1.4	5	180	130	2500	55	2.0

# FD

## Finger Chuck

- Ideal for clamping thin-wall and fragile workpieces without distortion
- Floating clamping fingers adjust to workpiece shape
- Available in 2-jaw, 3-jaw, and 4-jaw models



SPECIAL CHUCK

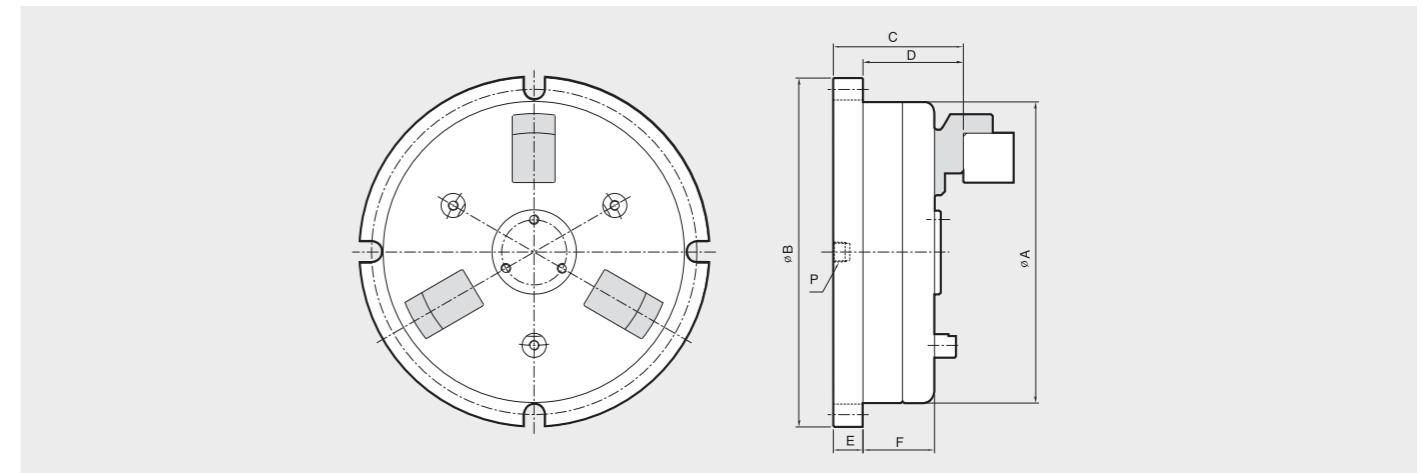
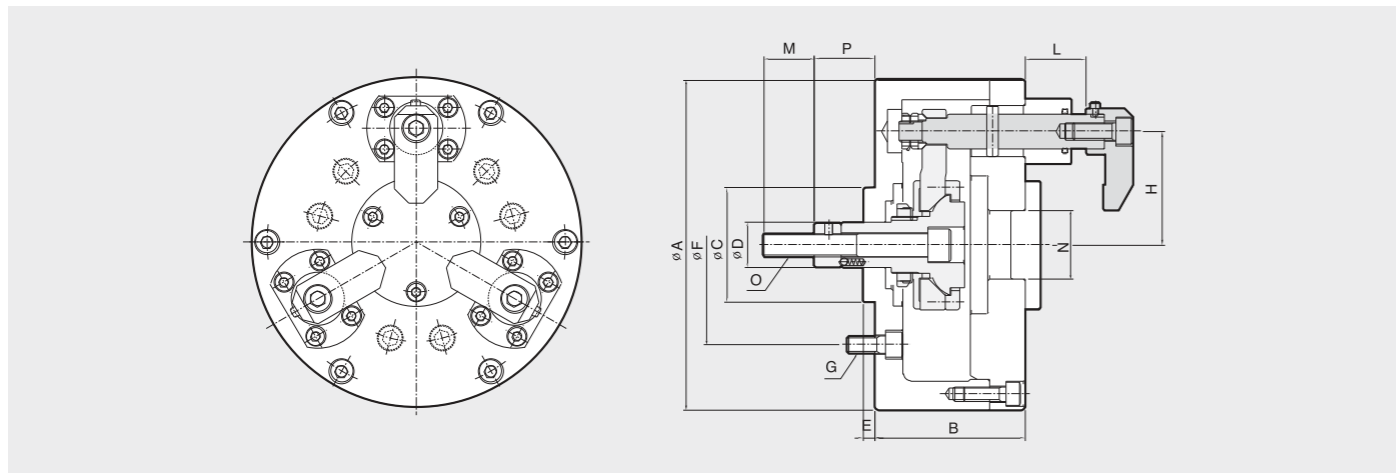
# DP

## Diaphragm Chuck

- Accuracy to 0.002mm ideal for hard turning gears
- Counter centrifugal design
- Sealed body eliminates maintenance
- Jaws change easily for quick set-up
- Self-contained cylinder



SPECIAL CHUCK



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	H	Lmax.	Lmin.	M	ΦN	O	Pmax.	Pmin.
FD-06	165	75	60	35	7	104.8	M10	55	54	30	36	40	M16	44	30
FD-08	210	85	80	42	7	133.4	M12	75	59	35	36	45	M20	50	35
FD-10	254	95	120	52	7	171.4	M16	95	72	40	46	55	M24	60	40
FD-12	304	110	120	52	7	171.4	M16	120	72	45	46	55	M24	60	40
FD-15	381	125	150	55	7	230	M20	155	84	50	50	60	M27	75	50
FD-18	457	140	150	55	7	230	M20	192	84	50	50	60	M27	75	50

### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Jaw Stroke Dia.	Plunger Stroke	Clamping Range		Max. Speed	Weight	GD <sup>2</sup>
	[kgf]	[kgf]	[mm]	[mm]	Max.	Min.	[r.p.m.]	[kg]	[kgf.m <sup>2</sup> ]
FD-06	1400	1800	2	14	75	30	3500	9	0.12
FD-08	2100	2700	2	15	110	50	2800	18	0.41
FD-10	2800	3600	2	20	145	60	2400	30	1.05
FD-12	2800	3600	2	20	195	110	2100	41	2.17
FD-15	3600	4500	2	20	260	180	1800	73	5.65
FD-18	3600	4500	2	25	330	215	1500	102	11.6

### Dimensions

	ΦA	ΦB	C	D	E	F	P
DP-06	171.4	208	92	72.9	19.1	65	1/4
DP-08	212.9	246	96.8	77.7	19.1	70	1/4
DP-10	251	284	96.8	77.7	19.1	85	1/4
DP-13	327.2	360	108	88.9	19.1	85	1/4
DP-17	428.9	476	109.5	90.4	19.1	85	1/4

### Specifications

Type	Max. Clamping Force	No. of Jaw	Jaw Stroke	Grip Dia.	Max. Speed	Pressure	Weight
	[kgf]		[mm]	[mm]	[r.p.m.]	[kgf/cm <sup>2</sup> ]	[kg]
DP-06	450	3 (6Jaw)	0.23	44-107	4500	4.5	11
DP-08	720	3 (6Jaw)	0.25	76-143	4000	4.5	20
DP-10	1150	3 (6Jaw)	0.25	114-181	3500	4.5	26.5
DP-13	2000	3 (6Jaw)	0.35	150-248	3000	4.5	43
DP-17	3600	3 (6Jaw)	0.40	203-349	2000	4.5	89

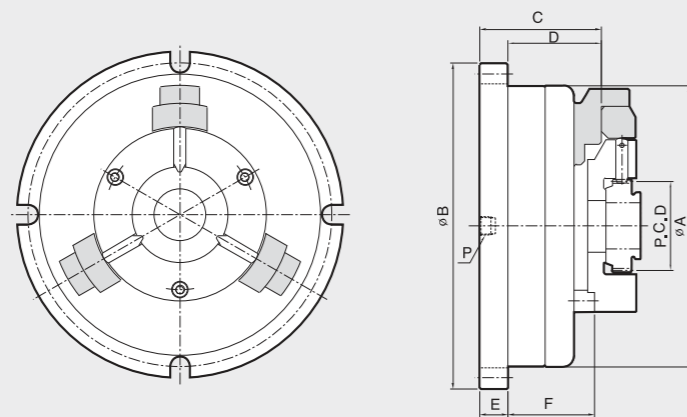
# GDP

## Gear Chuck

- Diaphragm chuck for hard turning/ grinding gears
- Jaws can be easily changed



SPECIAL CHUCK



### Dimensions

	ΦA	ΦB	C	D	E	F	P	H	Lmax.	Lmin.	M	ΦN	O	Pmax.	Pmin.
GDP-08	212.9	246	96.8	77.7	19.1	70	1/4	55	54	30	36	40	M16	44	30
GDP-10	251	284	96.8	77.7	19.7	85	1/4	75	59	35	36	45	M20	50	35
GDP-13	327.2	360	108	88.9	19.1	85	1/4	95	72	40	46	55	M24	60	40
GDP-17	428.9	476	109.5	90.4	19.1	85	1/4	120	72	45	46	55	M24	60	40

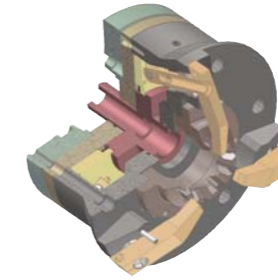
### Specifications

Type	Max. Clamping Force	No. of Jaw	Jaw Stroke	Grip Dia.	Max. Speed	Pressure	Weight
	[kgf]		[mm]	[mm]	[r.p.m.]	[kgf/cm <sup>2</sup> ]	[kg]
GDP-08	720	3	0.25	40-70	4000	4.5	20
GDP-10	1150	3	0.25	70-100	3500	4.5	26.5
GDP-13	2000	3	0.35	100-160	3000	4.5	43
GDP-17	3600	3	0.40	160-250	2000	4.5	89

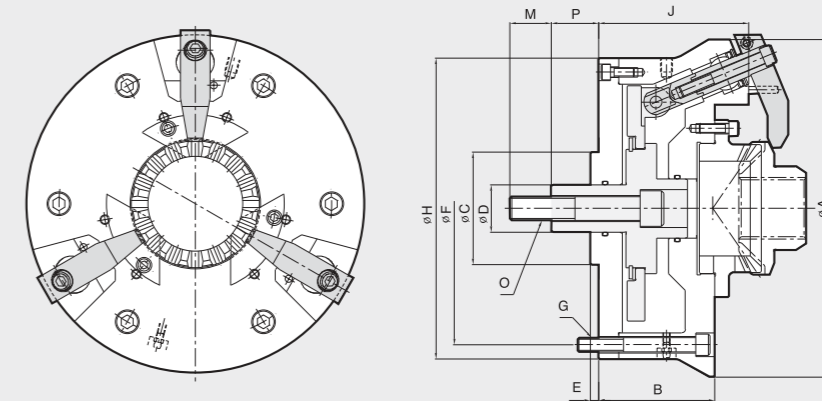
# BDG

## Bevel-Gear Chuck

- Finger chuck for high accuracy clamping of bevel gears
- Floating action ensures equal clamping force on all 3 fingers
- Available with hydraulic and pneumatic actuation



SPECIAL CHUCK



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	E	ΦF	G	ΦH	J	M	O	Pmax.	Pmin.
BDG-07	215	98	80	30	7	160	M12	185	126.5	27	M16	45	30
BDG-10	285	98	95	40	7	230	M12	254	126.5	35	M20	45	30

### Specifications

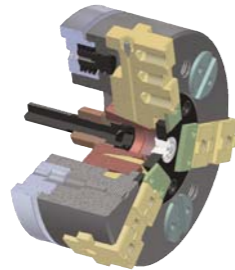
Type	Max. Drawbar Pull	Plunger Stroke	Clamping Range	Max. Speed	Weight
	[kgf]	[mm]	[mm]	[r.p.m.]	[kg]
BDG-07	1500	15	22.2 - 147.5	2000	30
BDG-10	1500	15	88.9 - 203.2	1500	45



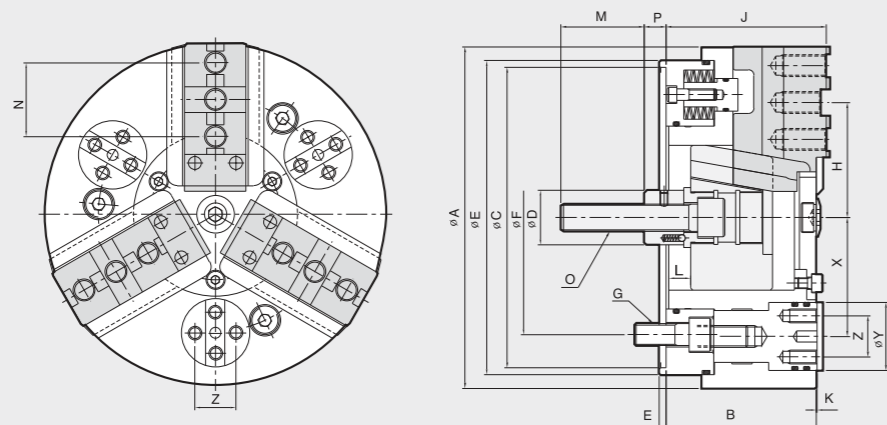
# PHD

## Outside Pull-Down Chuck

- Ideal for clamping workpieces with small gripping surfaces
- Sliding jaws clamp the component; then, the enhirechuck body pulls down to location for accurate machining



SPECIAL CHUCK



### Dimensions

	ΦA	B	ΦC(h7)	ΦD	ΦE	ΦF	G	Hmax.	Hmin.	J	K	Lmax.	Lmin.	M	N	O	Pmax.	Pmin.	X	ΦY	Z
PHD-200	200	105	170	40	5	133.4	M12	71.5	67.3	107	1	34	10	52	44.5	M20	25	1	70	42	24
PHD-250	250	115	220	40	5	171.4	M16	87	81.7	117	1	34	4	60	54	M20	31	1	87	50	30
PHD-300	300	123	220	50	5	171.4	M16	105	99	125	1	34	5	60	63.5	M24	30	-4	108	68	40
PHD-380	380	135	300	50	5	235	M20	133.5	127.5	137	1	34	16	60	76.2	M24	19	-15	130	80	54

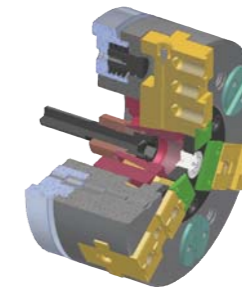
### Specifications

Type	Max. Clamping Force [kgf]	Max. Drawbar Pull [kgf]	Jaw Stroke Dia. Dia. [mm]	Plunger Stroke [mm]	Stop Traction [kgf]	Max. Speed [r.p.m.]	Weight [kg]
PHD-200	8100	3000	8.5	24	200	3500	21
PHD-250	11000	4000	10.5	30	300	3000	37
PHD-300	13500	5000	12.0	34	300	2500	54
PHD-380	16500	6000	12.0	34	450	200	95

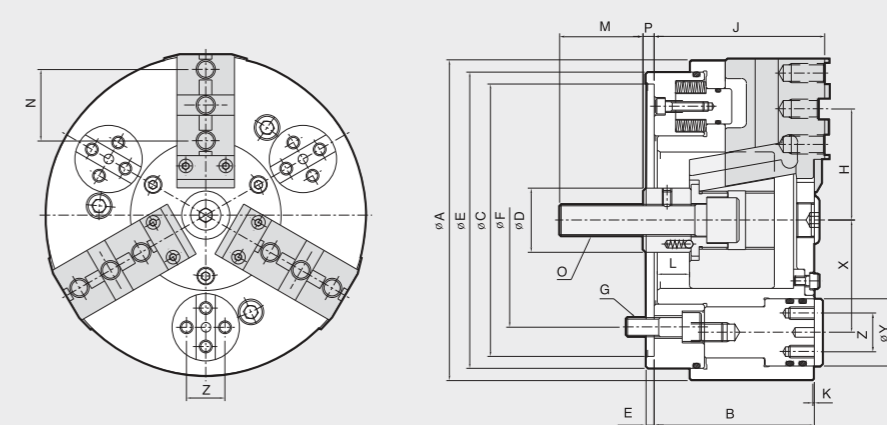
# PHDN

## Inside Pull-Down Chuck

- Ideal for clamping workpieces with small gripping surfaces
- Sliding jaws clamp the component; then, the enhirechuck body pulls down to location for accurate machining



SPECIAL CHUCK



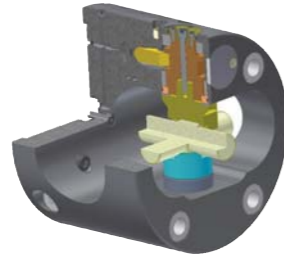
### Dimensions

	ΦA	B	ΦC(h7)	ΦD	ΦE	ΦF	G	Hmax.	Hmin.	J	K	Lmax.	Lmin.	M	N	O	Pmax.	Pmin.	X	ΦY	Z
PHDN-200	200	105	170	40	5	133.4	M12	71.5	67.3	107	1	34	10	52	44.5	M20	15	-9	70	42	24
PHDN-250	250	115	220	40	5	171.4	M16	87	81.7	117	1	34	4	60	54	M20	24	-6	87	50	30
PHDN-300	300	123	220	50	5	171.4	M16	105	99	125	1	39	5	60	63.5	M24	23	-11	108	68	40
PHDN-380	380	135	300	50	5	235	M20	133.5	127.5	137	1	50	16	60	76.2	M24	19	-15	130	80	54

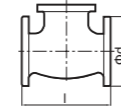
### Specifications

Type	Max. Clamping Force [kgf]	Max. Drawbar Pull [kgf]	Jaw Stroke Dia. Dia. [mm]	Plunger Stroke [mm]	Stop Traction [kgf]	Max. Speed [r.p.m.]	Weight [kg]
PHDN-200	8100	3000	8.5	24	200	3500	21
PHDN-250	11000	4000	10.5	30	300	3000	37
PHDN-300	13500	5000	12.0	34	300	2500	54
PHDN-380	16500	6000	12.0	34	450	200	95

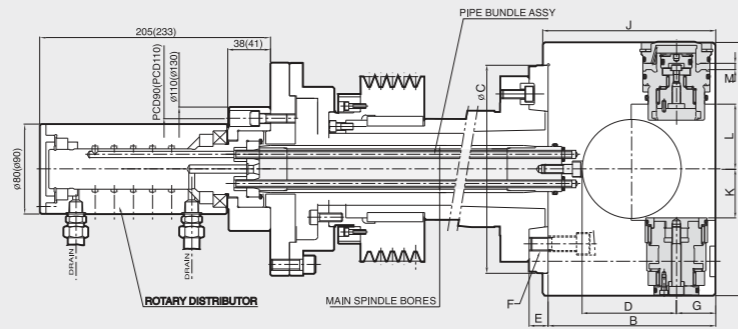
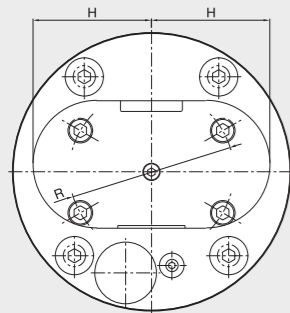
- Machine multiple surfaces in a single clamping
- On-the-fly indexing
- Accurate, durable indexing system
- Index positions 4 x 90° or 8 x 45°



### SPECIAL CHUCK



	Max. Workpiece Size	
	Φd [mm]	l [mm]
IAH-225	60	100
IAH-250	65	160
IAH-275	80	220
IAH-315	100	230
IAH-350	135	240
IAH-400	170	260
IAH-500	220	310
IAH-670	300	400



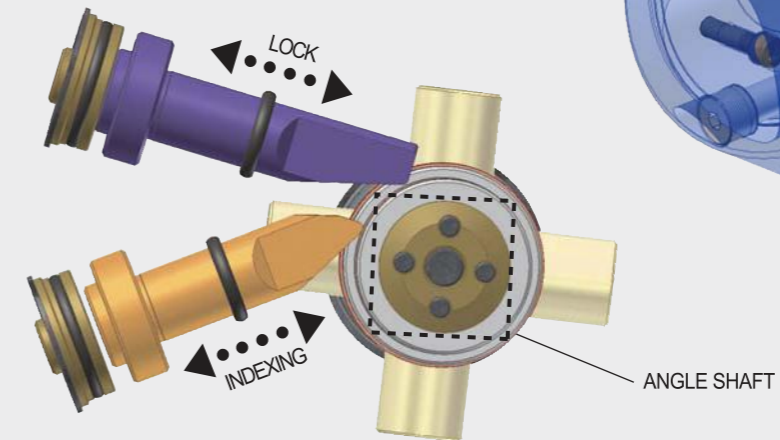
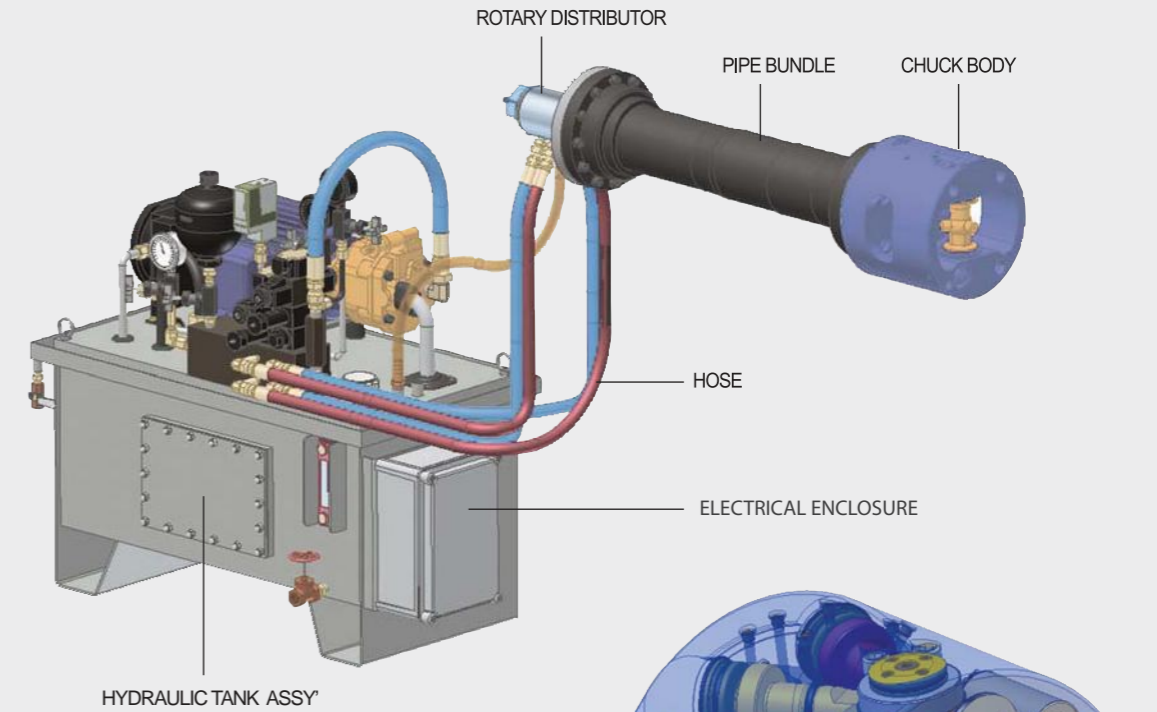
■ bracketed dimensions refer to models IAH-400 and larger.

#### Dimensions

	ΦA	B	ΦC(h7)	D	E	F	G	H	J	K	L	M	ΦR
IAH-225	225	149	185	84	25	M12	35	95	154	46	58	11.5	133.4
IAH-250	250	185	210	113	25	M12	40	106	190	46	55	20	133.4
IAH-275	280	208	210	125	25	M16	48	125	213	57	67	20.5	171.4
IAH-315	315	227	235	136	25	M16	50	136	232	70	85	22	171.4
IAH-350	350	235	290	148	30	M20	50	145	240	84	102	23	235
IAH-400	400	253	290	160	30	M20	60	165	259	100	114	30	235
IAH-500	500	301	380	200	35	M20, M24	68	205	308	133	157	35	235
IAH-670	670	465	380	286	40	M24	90	275	470	176	214	40	330.2

#### Specifications

Type	Max. Clamping Force [kgf]	Main Spindle Bore [mm]	Max. Speed [r.p.m.]	Weight [kg]	GD <sup>2</sup> [kgf·m <sup>2</sup> ]	Max. Workpiece Size	
						ØS[mm]	T[mm]
IAH-225	1270	OVER 45	2800	29	0.9	60	100
IAH-250	1730		2400	44	1.7	65	160
IAH-280	2550		2000	56	2.8	80	220
IAH-315	2550		1800	75	5.0	100	230
IAH-350	2550	OVER 55	1800	100	8.0	135	240
IAH-400	3530		1200	145	15.0	170	260
IAH-500	4670		900	230	25.4	220	310
IAH-670	5890		600	540	32.5	300	400



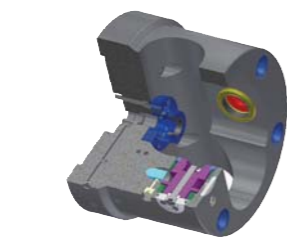
#### Work Pieces



# IAHT

## Auto-Indexing Chuck

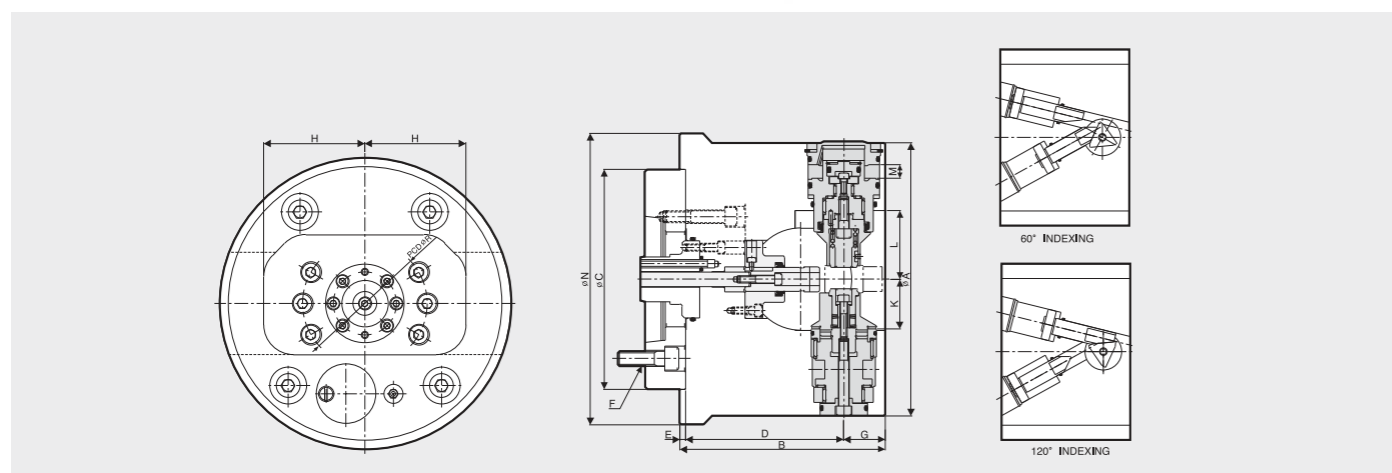
- Machine multiple surfaces in a single clamping
- On-the-fly indexing
- Index positions 3 x 120° or 6 x 60°
- Accurate, durable indexing system



Work Piece



SPECIAL CHUCK



### Dimensions

	$\Phi$ A	B	$\Phi$ C(h7)	D	E	F	G	H	K	L	M	$\Phi$ N	$\Phi$ R
IAHT-230	230	158	130	123	15	M10	35	102	40	58	14.5	245	104.8
IAHT-280	280	193.5	170	143.5	11	M16	50	82.5	56	71	21	295	130
IAHT-300	300	200	170	143.5	11	M16	56.5	82.5	56	65	25	295	130

### Specifications

Type	Clamp Piston Area	Main Spindle Bore	Max. Speed	Weight	GD <sup>2</sup>
	[cm <sup>2</sup> ]	[mm]	[r.p.m.]	[kg]	[kgf.m <sup>2</sup> ]
IAHT-230	1270	OVER 45	2400	35	1.3
IAHT-280	2170		2000	65	3.6
IAHT-300	3500		1800	83	4.2

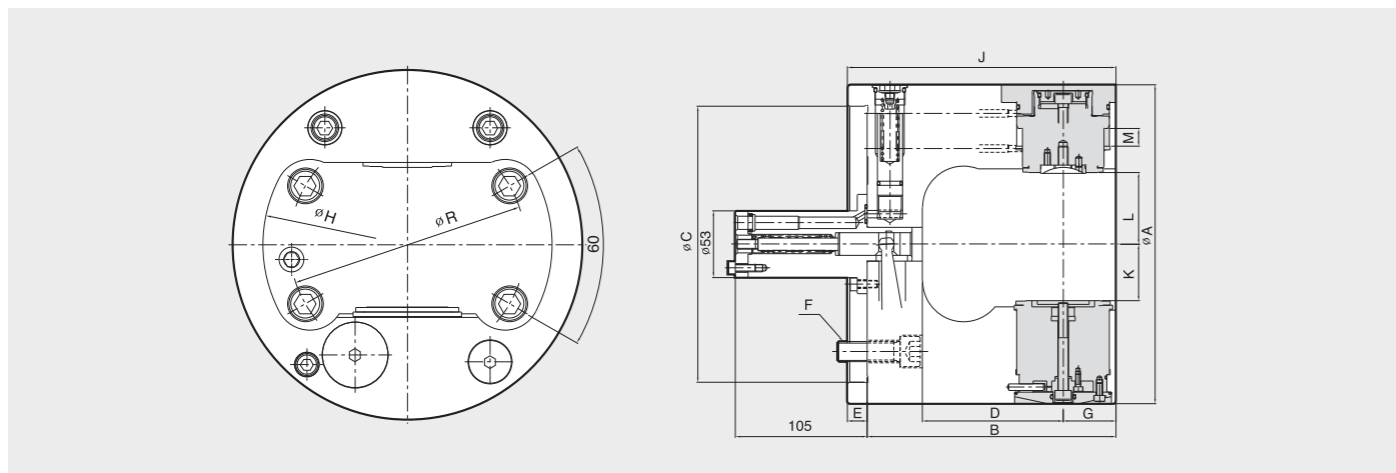
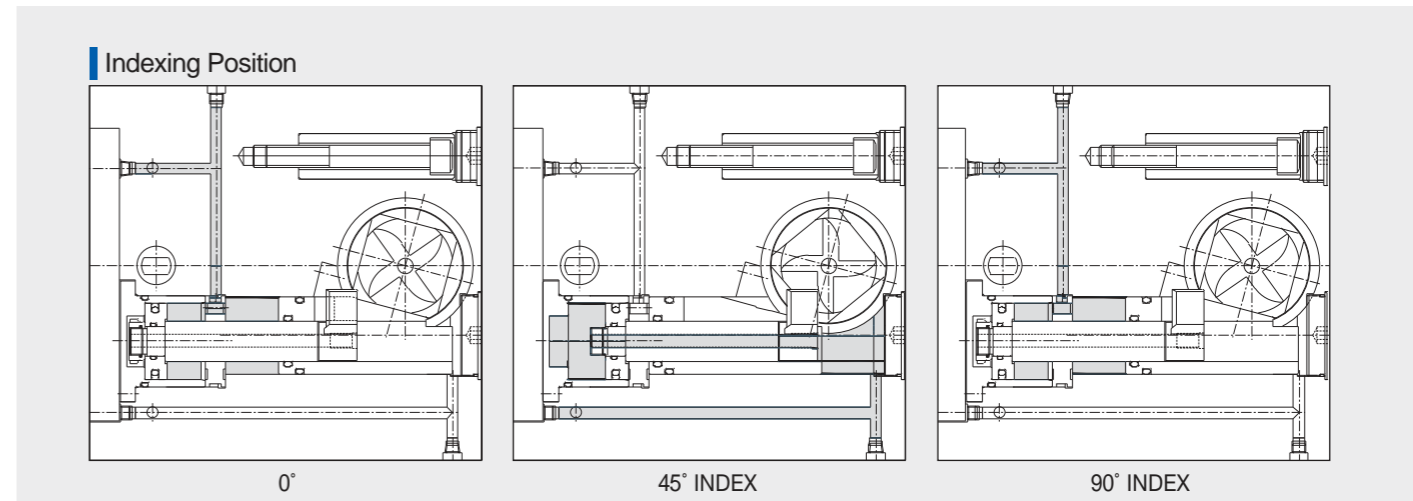
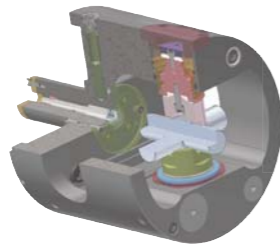
## notes



- Machine multiple surfaces in a single clamping
- On-the-fly indexing
- Accurate, durable indexing system
- Index positions 3 x 120° / 4 x 90°



**SPECIAL CHUCK**

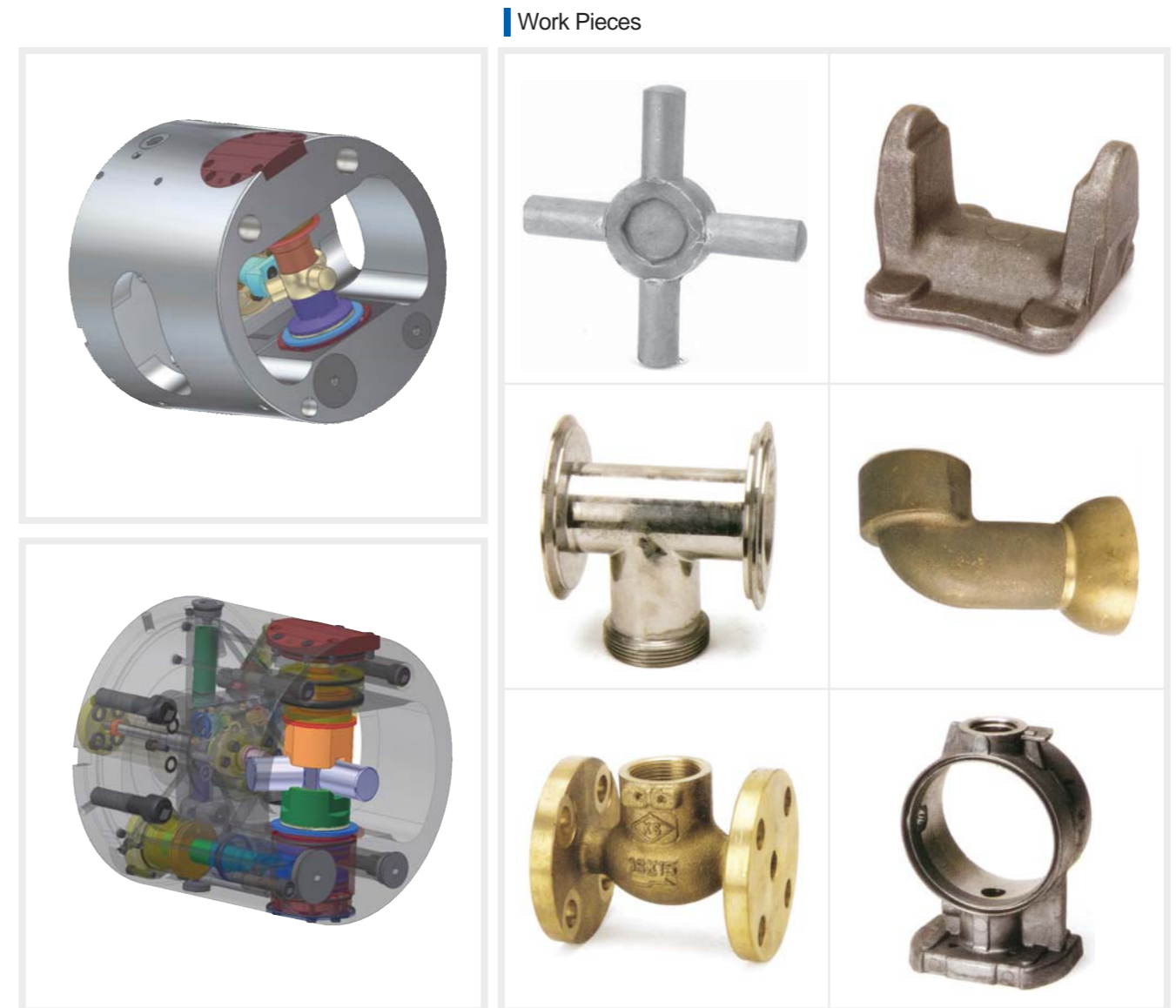


**Dimensions**

	ϕA	B	ϕC(h7)	D	E	F	G	ϕH	J	K	L	M	R
IAN-235	235	172	170	102	16	M12	30	206	188	42.5	54.5	15	133.4
IAN-254	254	198	220	112	16	M16	42	228	214	45	57	17	171.4
IAN-280	280	211	220	125	16	M16	42	250	227	58	70	17	171.4

**Specifications**

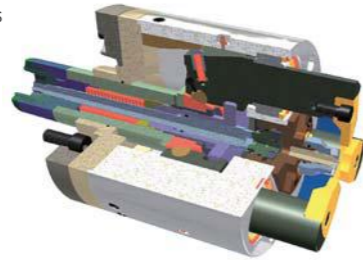
Type	Clamp Piston Area	Max. Pressure	Max. Speed	Weight	GD <sup>2</sup>
	[cm <sup>2</sup> ]	[kgf·m <sup>2</sup> ]	[r.p.m.]	[kg]	[kgf·m <sup>2</sup> ]
IAN-230	30	45	3000	32	0.27
IAN-254	43	45	2500	45	0.47
IAN-280	43	45	2300	55	0.88



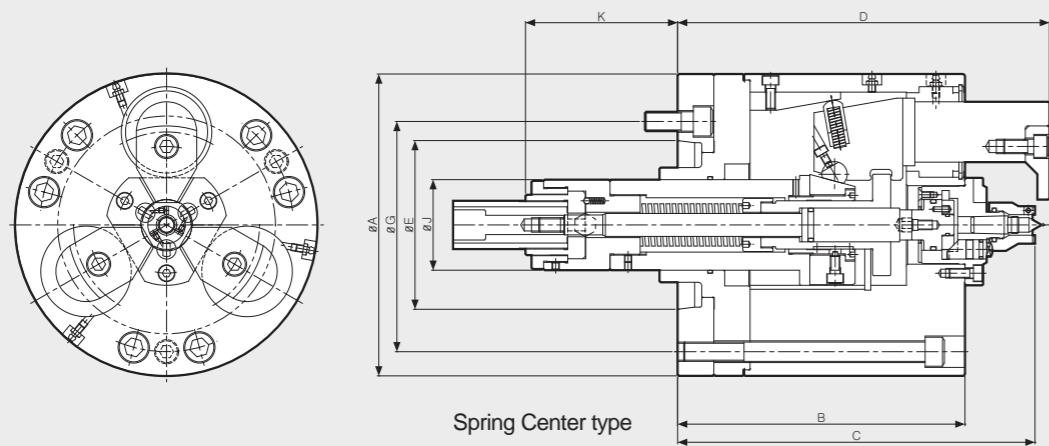
# RS

## Retractable-Jaw Shaft Chuck

- Machines shafts in one single clamping operation
- Change jaws and face driver to machine different sizes of shafts



SPECIAL CHUCK



### Dimensions

	ΦA	Bmax.	Bmin.	C	Dmin.	Dmin.	ΦE	ΦG	H	ΦJ	Kmax.	Kmin.	L	M	Pmax.	Pmin.	Q	R	Smax.	Smin.	T	U	V	W
RS-200	200	164	139	192	205	190	106.375	133.4	3xM12	50	96.5	58.5	M16	30	41.5	3.5	M34x0.5	30	92	82	12.5	10	M12	30
RS-250	250	205	173.5	240	252.5	221	139.719	171.4	3xM16	60	109.5	62.5	M20	45	49.5	2.5	M40x0.5	35	105	95	16.5	10	M16	37
RS-300	300	205	173.5	240	252.5	221	139.719	171.4	3xM16	80	114.5	67.5	M24	50	49.5	2.5	M50x0.5	40	110	100	13.5	10	M16	37

### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Clamping Range		Max. Speed	Weight	GD <sup>2</sup>
			Chuck	Face Driver			
RS-200	4000 [kgf]	3800 [kgf]	18-80	12-70	4000 [r.p.m.]	35 [kg]	0.19 [kgf·m <sup>2</sup> ]
RS-250	6500 [kgf]	6000 [kgf]	25-110	12-100	3500 [r.p.m.]	60 [kg]	0.79 [kgf·m <sup>2</sup> ]
RS-300	10000 [kgf]	8000 [kgf]	40-140	30-130	2500 [r.p.m.]	100 [kg]	1.35 [kgf·m <sup>2</sup> ]

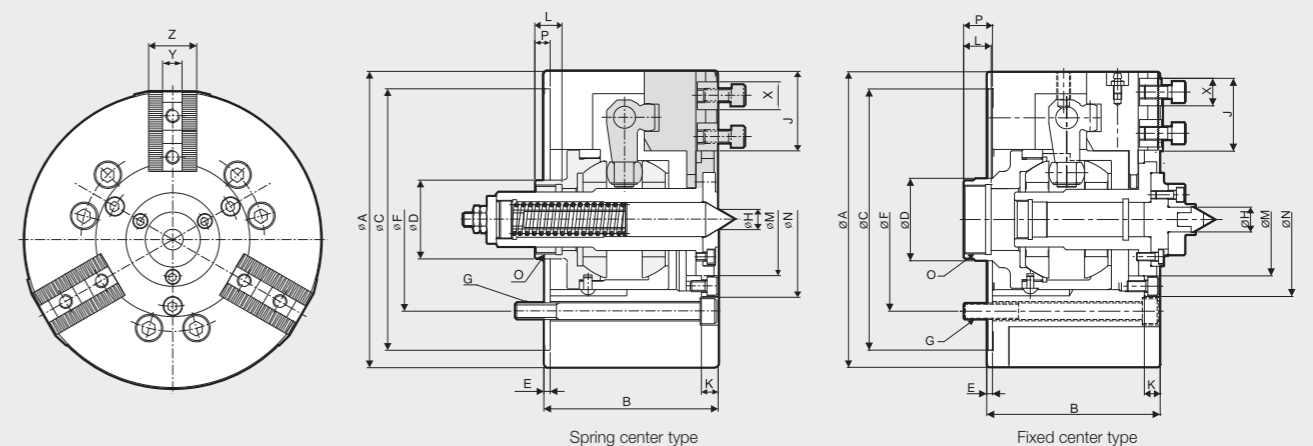
# CSF

## Compensating Chuck

- Jaws float on spherical bearing to determined clamping points
- Spring or fixed center available
- All three jaws apply constant gripping force



SPECIAL CHUCK



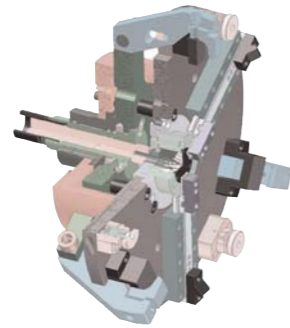
### Dimensions

	ΦA	B	ΦC(h7)	ΦD	ΦE	ΦF	G	ΦH	J	K	L	ΦM	ΦN	O	Pmax.	Pmin.	X	Y	Z
CSF-07	170	99	140	42	4	104.8	3-M10	11	45	11	20	65	86	M34xP1.5	28.2	8.2	16	11	28
CSF-08	215	126.2	190	57	4.2	133.4	6-M12	15	57.5	13	20	82	112.1	M50xP1.5	34	9	20	14	35
CSF-12	280	154.7	255	72	5.7	171.4	6-M16	20	72	17	26	110	142.2	M60xP1.5	44	14	26	20	45

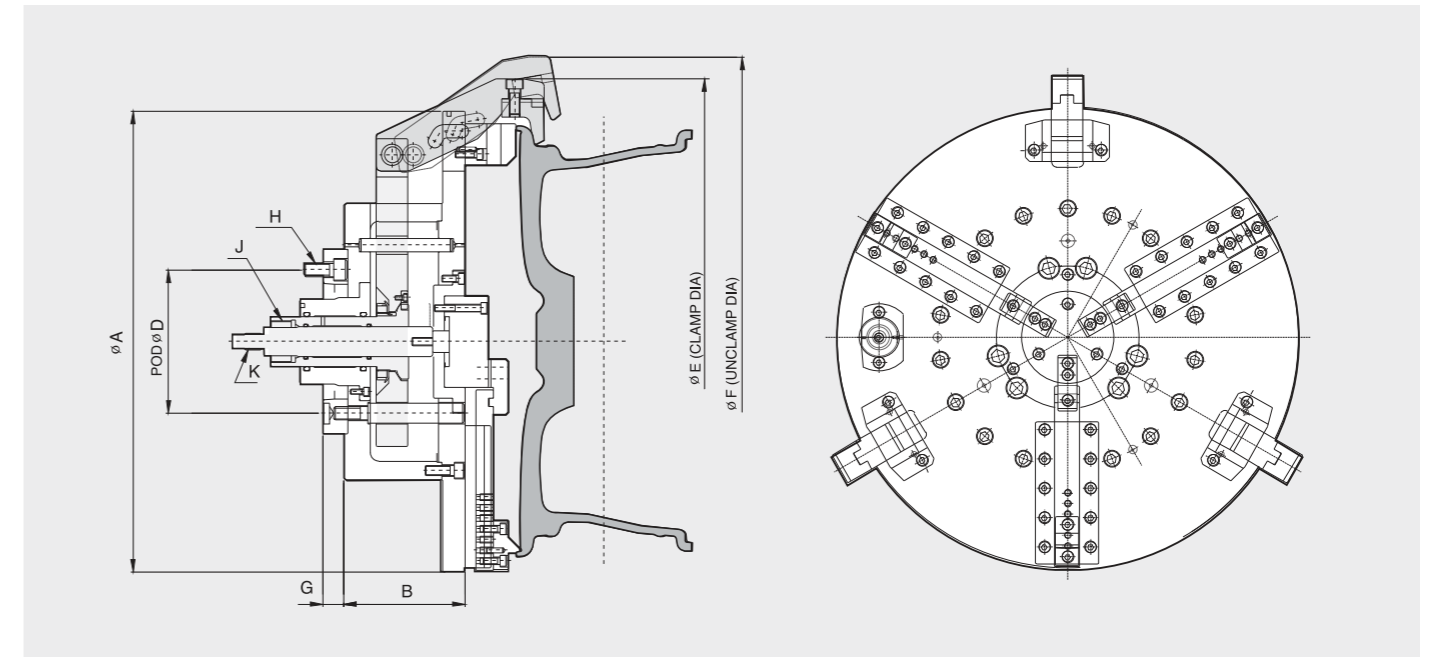
### Specifications

Type	Static Clamping force	Max. Drawbar Pull	Jaw Stroke Dia.	Plunger Stroke	Min. Chucking Dia.	Max. Runout Dia.	Max. Speed	Spring Force	Weight	GD <sup>2</sup>
CSF-07	2600 [kgf]	1500 [kgf]	16 [mm]	20 [mm]	20 [mm]	4 [mm]	4000 [r.p.m.]	45 [kgf]	15 [kg]	0.25 [kgf·m <sup>2</sup> ]
CSF-08	3200 [kgf]	2100 [kgf]	20 [mm]	25 [mm]	25 [mm]	4 [mm]	3200 [r.p.m.]	52 [kgf]	28 [kg]	0.8 [kgf·m <sup>2</sup> ]
CSF-12	4400 [kgf]	2700 [kgf]	25 [mm]	30 [mm]	30 [mm]	6 [mm]	2000 [r.p.m.]	106 [kgf]	58 [kg]	3.13 [kgf·m <sup>2</sup> ]

- Ideal for machining aluminum wheels
- Accommodates a variety of wheels by changing jaws and arms
- Lower weight increases efficiency and reduces down time



### SPECIAL CHUCK



### Cam Arm Dimensions

FWC-300					FWC-310						FWC-320			
JAW	Cam Arm				JAW	Cam Arm					JAW	Cam Arm		
	S	M	L	XL		S	M	L	XL	XXL		S	M	L
A	12	13	14	15	A	13	14	15	16	17	A	17	18	19
B	13	14	15	16	B	14	15	16	17	18	B	18	19	20
C	14	15	16	17	C	15	16	17	18	19	C	19	20	21.5
D	15	16	17	18	D	16	17	18	19	20	D	20	21.5	22.5

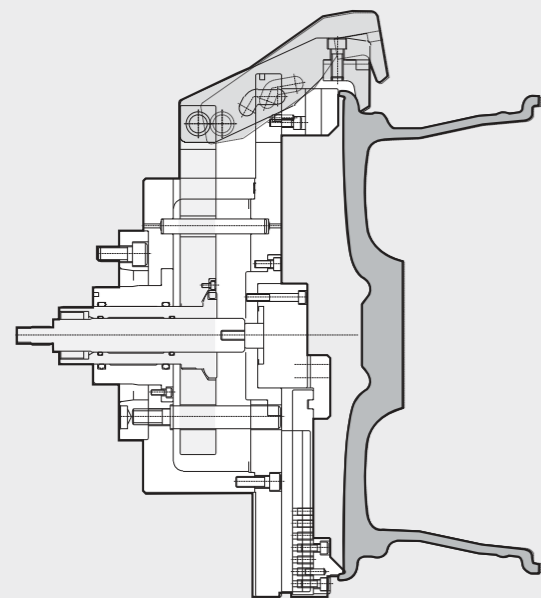
### Dimensions

	$\phi A$	B	C (h6)	$\phi D$	E	F	G	H	J	K
FWC-300	495	139.7	139.719	171.45			25	M16	M42	M24
FWC-310	550	145	196.87	235	Flexible		35	M20	M42	M24
FWC-320	660	199.5	196.87	235			35	M20	M42	M24

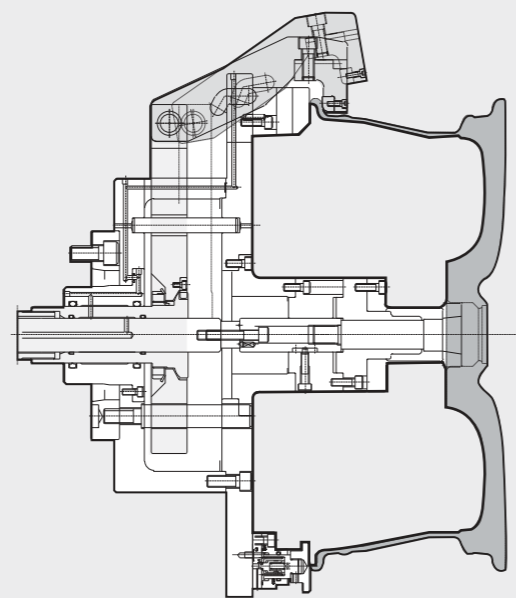
### Specifications

Type	Max. Clamping Force	Max. Drawbar Pull	Jaw Stroke Dia.	Plunger Stroke	Wheel Size Range	Max. Speed	Weight	GD <sup>2</sup>
	[kgf]	[kgf]	[mm]	[mm]	[inch]	[r.p.m.]	[kg]	[kgf·m <sup>2</sup> ]
FWC-300	970	3000	27	35	12-18	2800	120	2.4
FWC-310	970	3000	27	35	13-20	2200	160	3.5
FWC-320	970	3000	27	35	17.5-24.5	1800	240	7.5

Type	Wheel Size											
	12"	13"	14"	15"	16"	17"	18"	19"	20"	21.5"	22.5"	
FWC-300	0	0	0	0	0	0	0	0	0	0	0	
FWC-310		0	0	0	0	0	0	0	0	0	0	
FWC-320						0	0	0	0	0	0	



(OP#10)



(OP#20)