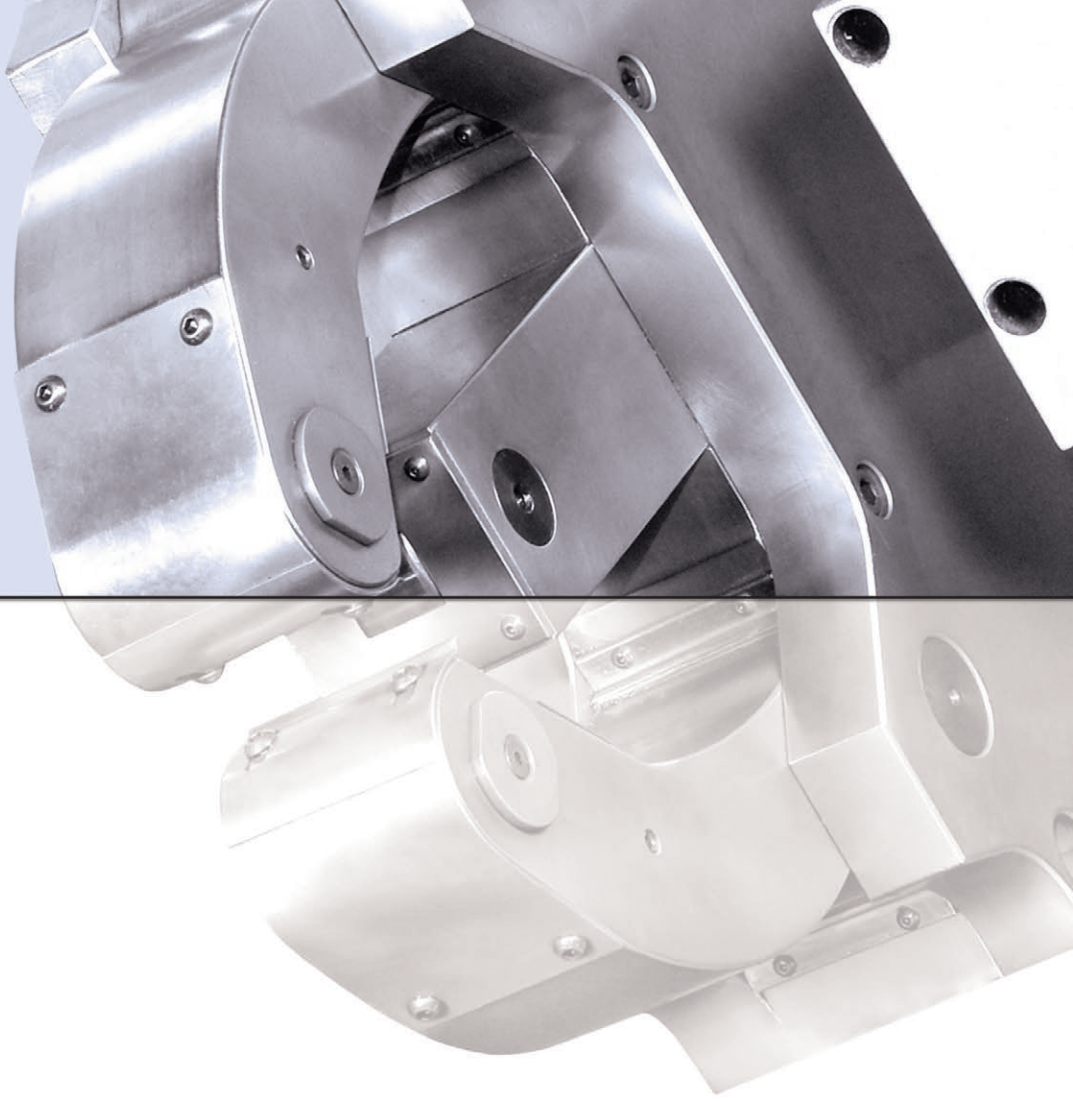


STEADY RESTS





Steady Rests

- 2 FRUN**
Grip range 6mm to 630mm
- 3 FRU**
Grip range 4mm to 800mm
- 4 FRUA**
Grip range 4mm to 800mm
- 5 FRUB**
Grip range 8mm to 630mm
- 6 FRUAB**
Grip range 20mm to 630mm
Side mounted cylinder
Extra opening top arm for vertical loading
- 7 KRHS**
Crank shaft machining
- 8 KRSHS**
Side mounted actuator for crank shaft machining
- 9 VLHS**
Extra wide opening top arm for vertical loading
- 10 VGHS**
Ideal for cylindrical and camshaft grinding
- 11 GHS**
Ideal for cylindrical grinding, camshaft grinding and camlobe grinding
- 12 CS**
Compact to fit smaller machines
- 13 Heavy Duty**
Heavy components up to 40 tons



Precision Collet Chucks



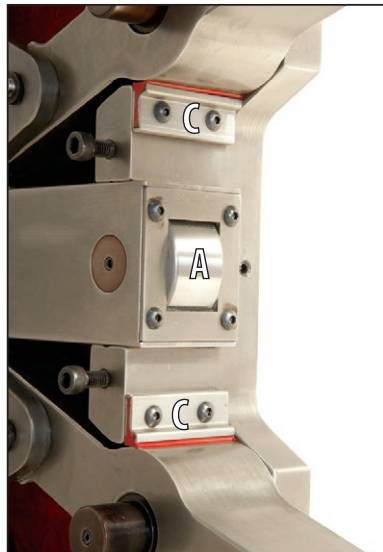
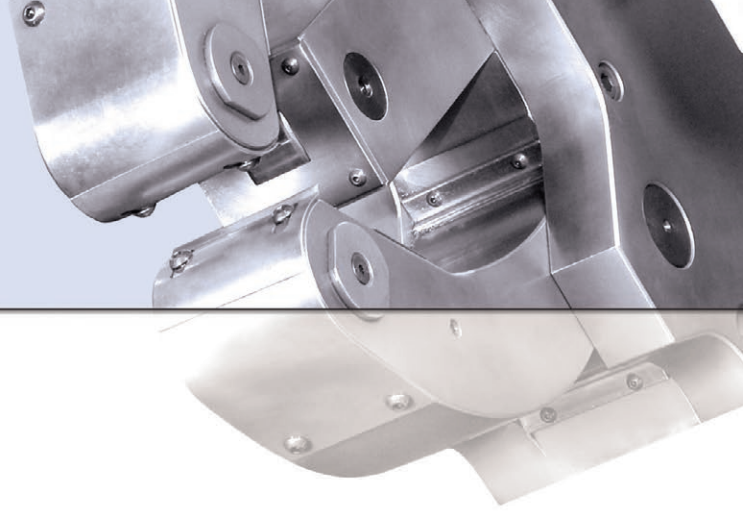
Large Chucks



Custom Engineered Workholding

STEADY REST FEATURES

stability. value. performance.



ECONOMICAL

A. Each steady rest comes with a spare set of rollers and chip guards.

RELIABLE

B. Arms open without springs, creating less complicated and more reliable performance.

DURABLE

C. Wipers on external moving surfaces to prevent chips and coolant from entering the steady rest.

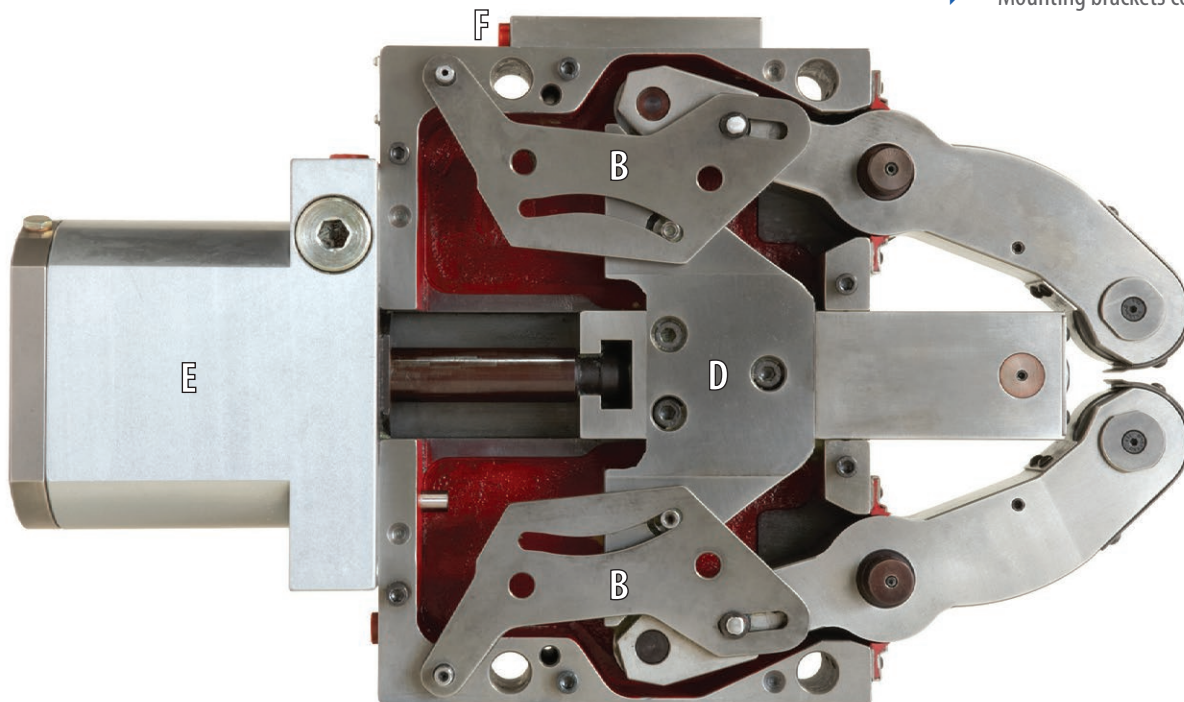
D. Hardened and ground operating cam.

FLEXIBLE

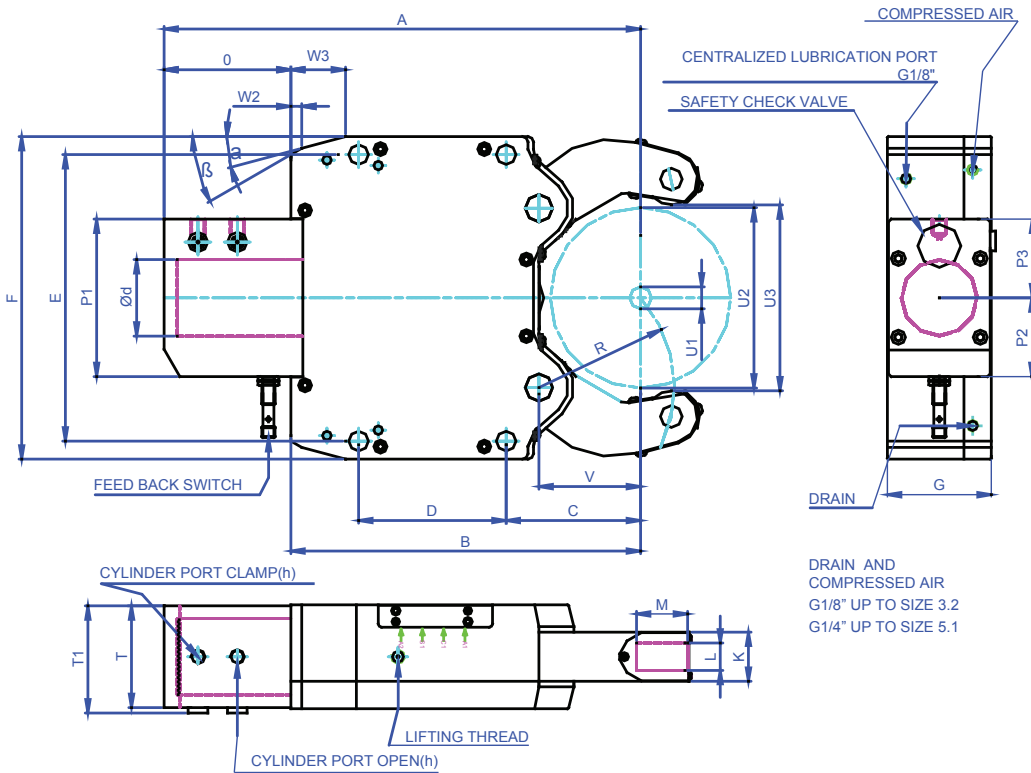
E. Cylinder can be hydraulically or pneumatically operated.

F. Come equipped with centralized lubrication system.

- ▶ All parts are made from alloy steel, hardened to 60HRC and nitride for rust prevention.
- ▶ Mounting brackets come with an adjustable gib.



Kitagawa
NORTHTECH
REDEFINING PRODUCTIVITY™

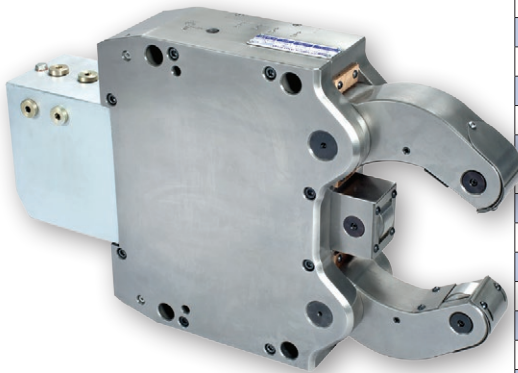


The FRUN Series is for all standard applications with mounting dimensions similar to the FRU Series. The compact size allows for easy mounting on flat or slant bed lathes.

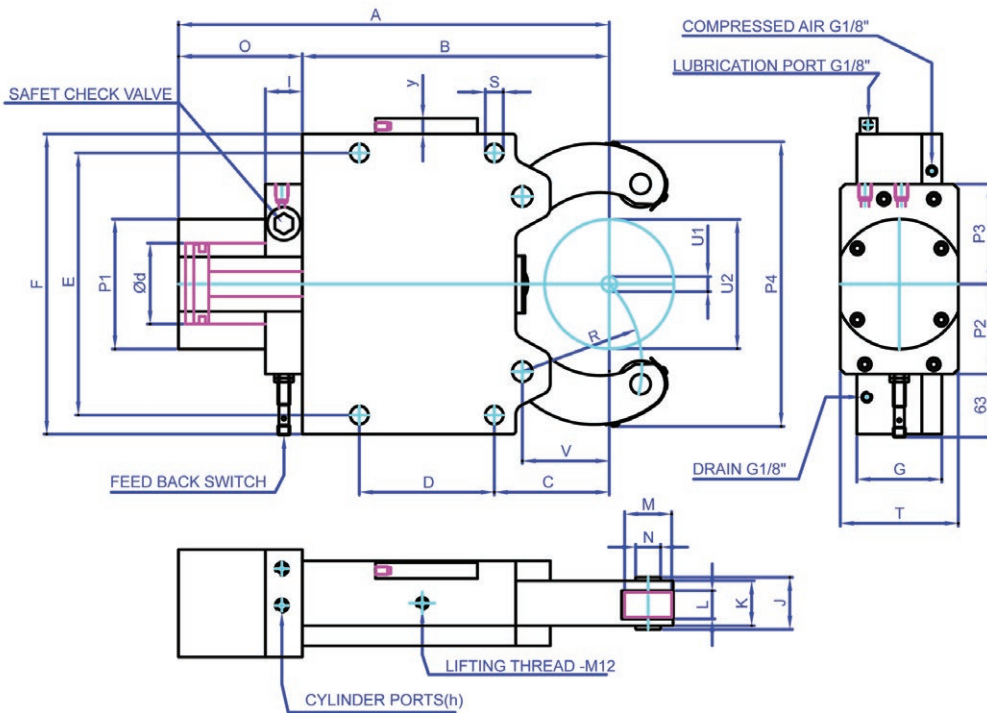
STANDARD FEATURES...

- Fully sealed body
- Safety valve
- Provision for max. opening feedback
- 1 set swarf guard 3-piece
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE



	FRUN1	FRUN2	FRUN3	FRUN3.1	FRUN3.2	FRUN4	FRUN5	FRUN5.1
A	214.5	277	428	436	451	603	697	717
B	149	195	312	320	335	448	510	530
C	52	70	115	123	138	146	178	198
D	66	85	135	135	135	240	270	270
E	140	170	262	262	262	365	400	270
F	160	195	295	295	295	405	440	440
G	63	75	95	95	95	110	145	145
K	28	35	45	45	45	60	75	75
L	15	19	25	25	25	25	29	29
M	24	35	47	47	47	52	62	62
O	65.5	82	116	116	116	155	187	187
P1	95.5	122	144	144	144	164	174	174
P2	37.5	61	72	72	72	82	87	87
P3	58	61	72	72	72	82	87	87
R	55	65.5	115.5	124	140	172	209	229
S	11	14	18	18	18	23	23	23
T	57	69	93	93	93	108	140	140
T1	62	74	98	98	98	113	147	147
V	41	51	85	93	108	128	160	180
W2	5	11.2	10	10	10	18.3	19	19
W3	20	30	50	50	50	58	62	62
β	45	30	30	30	30	40	40	40
α	15	15	15	15	15	15	18	18
Centering range	U1	6	8	12	20	30	45	85
	U2	70	101	152	165	200	245	350
Max. Axial opening	U3	75	106	162	170	202	253	352
Cylinder bore	Ød	30	50	70	70	70	90	100
Hydraulic connection	h	1/8" BSP	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 1/4"
Operating pressure Min(Max)	bar	6(50)	8(70)	8(80)	8(80)	8(80)	8(80)	8(80)
Max. clamp force/roller	daN	100	450	1000	1000	1000	1700	2000
Centering accuracy	mm	0.02	0.02	0.04	0.04	0.04	0.06	0.06
Repeatability	mm	0.005	0.005	0.007	0.007	0.007	0.01	0.01
Max peripheral roller speed	m/min	850	800	725	725	725	700	700
Approx weight	kg	10	20	48	48	48	104	178



This series is for all standard applications. Available with clamp ranges from 4 mm to 800 mm. Can be mounted to flat or slant bed lathes. We can supply mounting brackets to meet your needs. All our steady rests come with a spare set of rollers and spare chip guard.

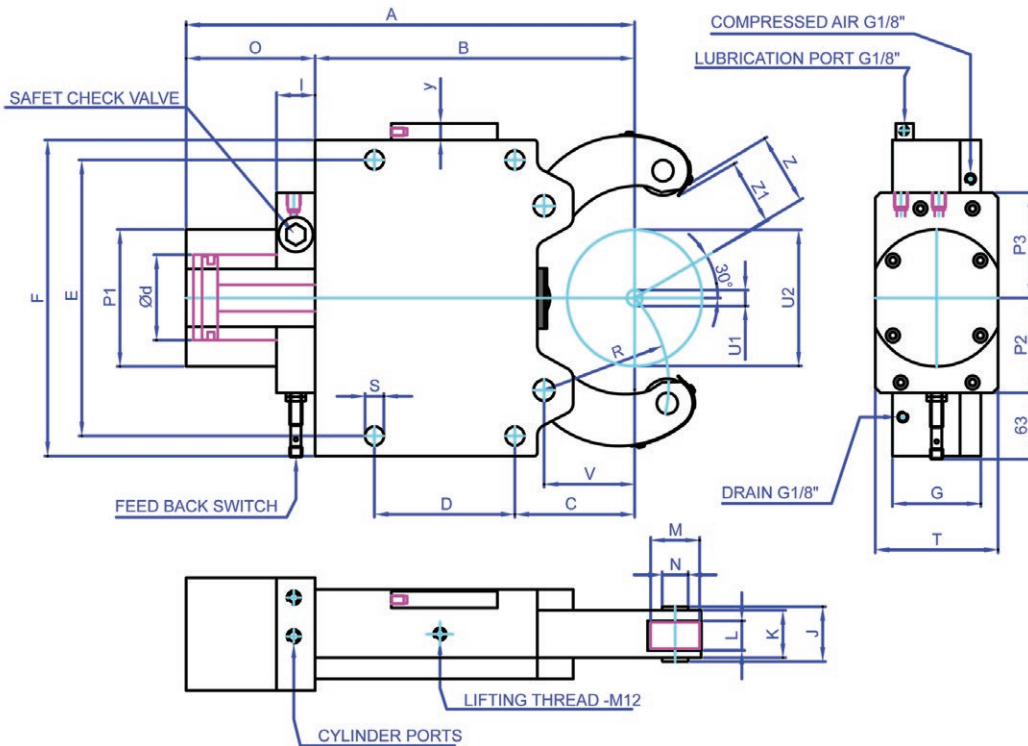
STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

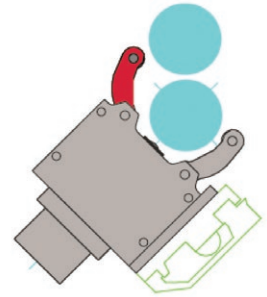
STEADY REST TYPE



	FRU1	FRU2J	FRU3J	FRU3.1J	FRU3.2J	FRU4J	FRU5	FRU5.1	FRU6	FRU7	FRU8	
A	212	298.5	462	470	486	624	706	731.5	980	1235.5	1404	
B	137	195	308	316	332	437	500	520	709	898	1000	
C	51	70	115	123	138	146	178	198	215	320	375	
D	64	85	135	135	135	240	270	270	330	440	500	
E	118	170	262	262	262	365	400	400	610/640	650	855	
F	132	205	290	290	290	400	450	450	680	720	930	
G	55	70	85	85	85	110	145	145	145	162	190	
I	—	33	37	37	37	37	37	37	46	60	60	
J	33	42	52	52	52	67	83	83	83	96	110	
K	25	35	45	45	45	60	75	75	75	82	100	
L	12	19	25	25	25	25	29	29	29	32	32	
M	19	35	47	47	47	52	62	62	80	100	100	
N	10	21	25	25	25	32	40	40	43	55	60	
O	75	103.5	154	154	154	187	206.5	211.5	271	337.5	385.5	
P1	82.5	105	137	137	137	165	165	165	190	238	238	
P2	27.5	66	92	90	90	102	102	102	115	143	143	
P3	55	75	92	94	94	110	110	110	130	158	158	
P4	118.5	188	279	279	323	415	473	509.5	732	869.5	976	
R	50.5	75	117.3	124	139	172	209	236	290	390	402	
S	11	14	18	18	18	23	23	23	27	27	35	
T	55	68	102	102	102	126	144	144	158	190	190	
V	37	60	91.5	99.5	109.5	128	160	180	182	292.5	295.5	
Y	—	19	19	19	19	19	20	20	27	27	27	
Centering range without chip guard	U1	4	8	12	20	50	30	45	85	125	200	230
	U2	64	101	152	165	200	245	310	350	460	530	630
Centering range with 3 piece chip guard	U1	4	16	16	20	50	30	45	85	125	191	230
	U2	64	101	152	165	200	245	310	350	460	530	630
Cylinder bore	Ød	30	50	80	80	80	100	100	130	150	150	
Hydraulic connection (BSP)	h	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Operating pressure min(max)	bar	6(50)	8(60)	8(60)	8(60)	8(60)	8(80)	8(80)	8(70)	6(70)	6(70)	
Max clamp force/roller	daN	100	350	1000	1000	1000	1500	2000	2000	3000	4000	4000
Clamping pressure/roller at 15 bar	daN	35	100	250	250	500	500	500	670	900	900	
Centering accuracy over entire clamping range	mm	0.02	0.02	0.04	0.04	0.04	0.05	0.06	0.06	0.06	0.08	0.08
Repeatability	mm	0.005	0.005	0.007	0.007	0.007	0.007	0.01	0.01	0.01	0.02	0.02
Max peripheral speed	m/min	850	950	800	800	725	725	670	670	525	570	570
Approx weight	kg	7	18.5	48	48	50	104	155	155	430	520	580



This series is made for applications where vertical loading is required e.g. using a gantry loader.



STEADY REST TYPE

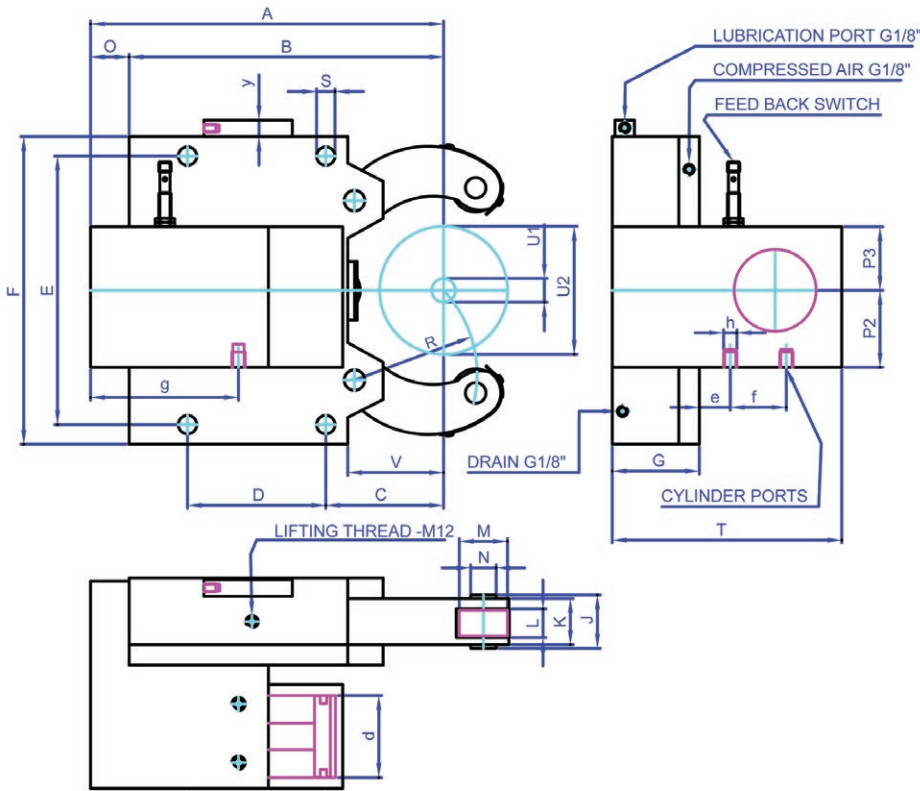


STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

	FRUA 2	FRUA 3	FRUA 3.1	FRUA 4	FRUA 5	FRUA 6
A	295	463	—	609	686	980
B	195	308	316	437	500	709
C	70	115	123	146	178	215
D	85	135	135	240	270	330
E	170	262	262	365	400	610/640
F	205	290	290	400	450	705
G	70	85	85	110	145	145
I	33	37	37	38	37	37
J	42	53.5	52	67	78.5	83
K	35	45	45	60	75	75
L	19	25	25	25	29	29
M	35	47	47	52	62	80
N	21	20	25	32	40	42
O	100	155	149	172	186	271
P1	102	137	137	165	168	200
P2	66	92	90	102	94	120
P3	75	92	94	110	118	135
R	75	119	124	172	209	290
S	14	18	18	23	23	27
T	68	102	102	126	144	158
V	60	91.5	99.5	128	160	175
Y	19	19	19	19	20	19
Centering range without chip guard	U1	8	12	20	30	48
	U2	80	130	150	220	460**
Centering range with 3 piece chip guard	U1	16	20	20	30	48
	U2	80	130	150	220	460**
Gantry loading clamp range	Z	41	55	76	111	135
	Z1	34	54	74	106	130
Cylinder bore	Ød	50	80	80	100	100
Hydraulic connection (BSP)	h	1/4"	1/4"	1/4"	3/8"	3/8"
Operating pressure min(max)	bar	8(60)	8(60)	8(60)	8(60)	8(70)
Max clamp force/roller	daN	350	1000	1000	1500	2000
Clamping pressure/roller at 15 bar	daN	100	250	250	500	670
Centering accuracy over entire clamping range	mm	0.02	0.04	0.04	0.05	0.06
Repeatability	mm	0.005	0.007	0.007	0.007	0.01
Max peripheral speed	m/min	950	800	800	725	670
Approx weight	kg	18.5	48	48	104	160

** Angle of inclination is 19 degree instead of 30 degree



This series is made for machines where the rear mounted cylinder may interfere with the sheet metal. The side mounted cylinder makes for a more compact steady rest.

STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE

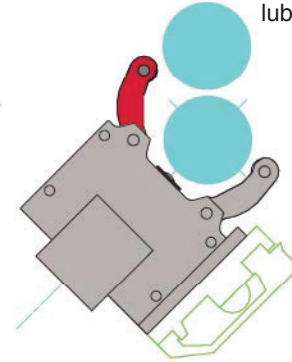
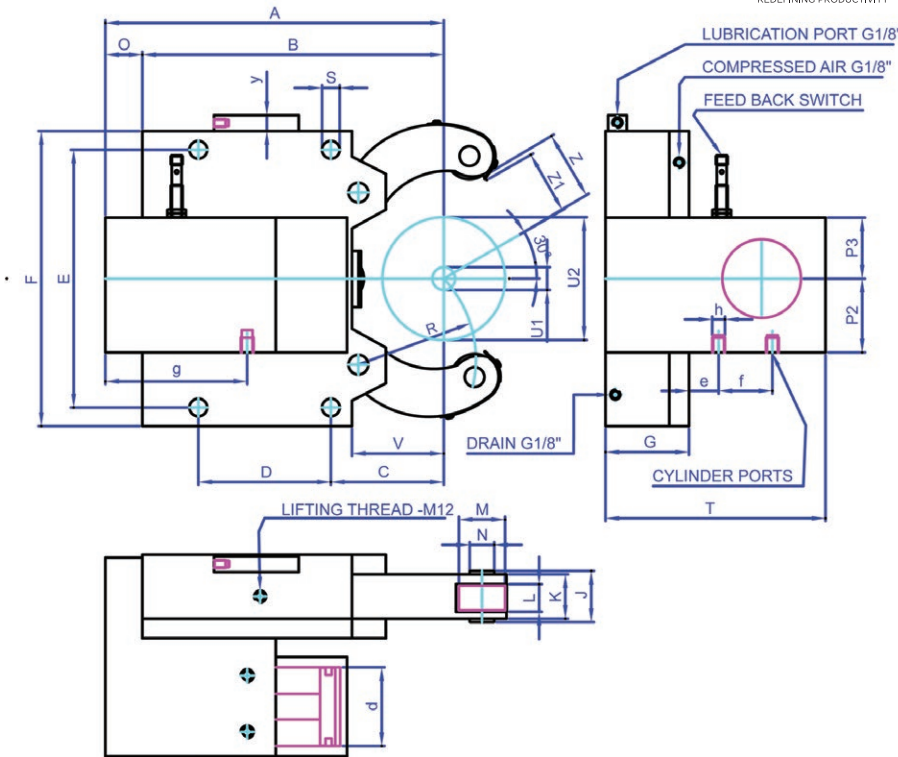


	FRUB 3	FRUB 3.1	FRUB 4	FRUB 5	FRUB 6	FRUB 7	FRUB 8	
A	348	356	480	612.5	823	1001	1130	
B	308	316	437	500	709	897.5	1019	
C	115	123	146	178	215	320	375	
D	135	135	240	270	330	440	500	
E	262	262	365	400	610/640	650	855	
F	290	290	400	450	680	710	930	
G	85	85	110	145	145	180	190	
J	52	52	67	80	83	112	110	
K	45	45	60	75	75	100	100	
L	25	25	25	29	29	32	32	
M	47	47	52	62	80	100	100	
N	25	25	32	36	43	55	60	
O	40	40	43	112.5	114	103.5	111	
P2	74	74	85	85	125.8	130	130	
P3	57	57	68	85	89.2	130	130	
R	117.5	124	172	209	290	398	402	
S	18	18	23	23	27	27	35	
T	199	198	246	325	383	405	487	
V	91.5	99.5	128	160	182	283.5	290	
Y	19	19	19	20	27	27	27	
Centering range without chip guard	U1	12	20	30	50	125	200	230
	U2	152	165	245	310	460	530	630
Centering range with 3 piece chip guard	U1	21	20	30	50	125	200	230
	U2	152	165	245	310	460	530	630
Cylinder bore	Ød	80	80	100	100	130	150	150
	e	58	58	68	85	55	191	191
	f	27	27	39	40	50	50	50
	g	180	180	220	270	430	450	450
Hydraulic connection (BSP)	h	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	
Operating pressure min(max)	bar	8(60)	8(60)	8(60)	8(80)	8(70)	8(70)	
Max clamp force/roller	daN	1000	1000	1500	2000	3000	4000	4000
Clamping pressure/roller at 15 bar	daN	250	250	400	400	600	880	880
Centering accuracy over entire clamping range	mm	0.04	0.04	0.05	0.06	0.06	0.08	0.08
Repeatability	mm	0.007	0.007	0.007	0.01	0.01	0.02	0.02
Max peripheral speed	m/min	800	800	720	650	525	570	570
Approx weight	kg	53	53	115	190	500	580	650

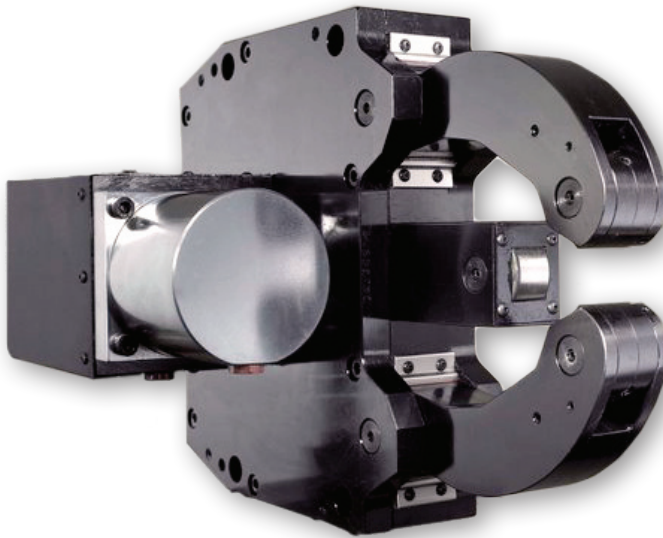
Steady rest with side mounted actuating cylinder and extra wide opening top arm.

STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication



STEADY REST TYPE



	FRUAB 3	FRUAB 3.1	FRUAB 4	FRUAB 5
A	348	356	480	614
B	308	316	437	500
C	115	123	146	178
D	135	135	240	270
E	262	262	365	400
F	290	290	400	450
G	85	85	110	145
J	52	52	69.5	83
K	45	45	60	75
L	25	25	25	29
M	47	47	52	62
N	25	25	32	36
O	40	40	43	124
P2	74	74	85	85
P3	57	57	68	85
R	117.5	124	172	209
S	18	18	23	23
T	199	198	245	325
V	91.5	99.5	128	160
Y	19	19	19	20
U1	12	20	30	48
U2	130	150	220	268
U1	21	20	30	48
U2	130	150	220	268
Z	66	76	111	135
Z1	62	72	106.5	130
Ød	80	80	100	100
e	58	58	68	85
f	27	27	39	40
g	180	180	220	270
h	1/4"	1/4"	3/8"	3/8"
Operating pressure min(max)	bar 8(60)	bar 8(60)	bar 8(60)	bar 8(80)
Max clamp force/roller	daN 1000	daN 1000	daN 1500	daN 2000
Clamping pressure/roller at 15 bar	daN 250	daN 250	daN 400	daN 400
Centering accuracy over entire clamping range	mm 0.04	mm 0.04	mm 0.05	mm 0.06
Repeatability	mm 0.007	mm 0.007	mm 0.007	mm 0.01
Max peripheral speed	m/min 800	m/min 800	m/min 720	m/min 650
Approx weight	kg 55	kg 55	kg 115	kg 190

Centering range without chip guard

Centering range with 3 piece chip guard

Cylinder bore

Hydraulic connection (BSP)

Operating pressure min(max)

Max clamp force/roller

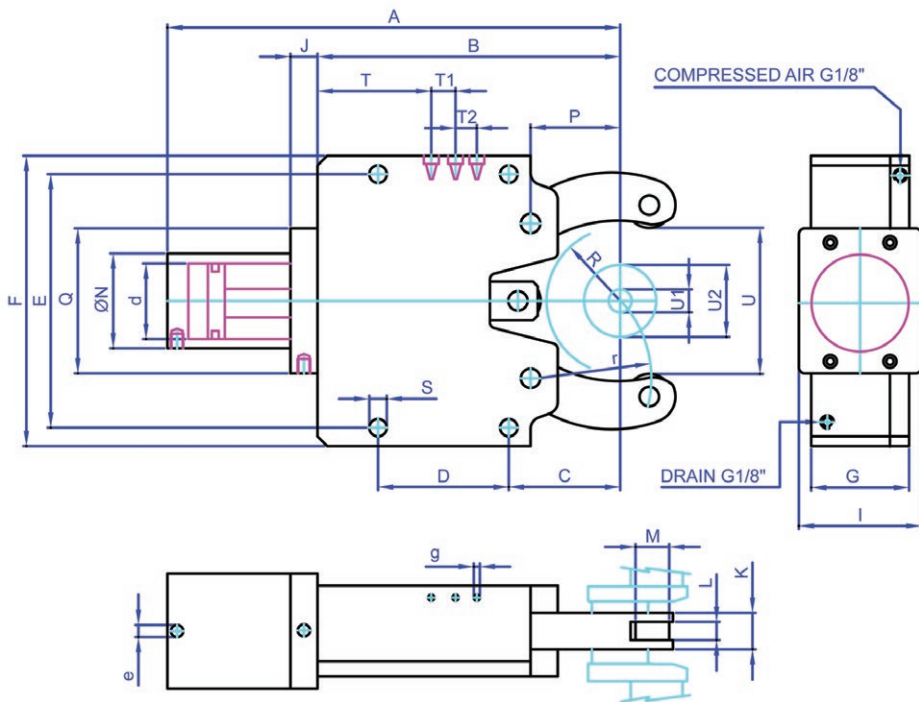
Clamping pressure/roller at 15 bar

Centering accuracy over entire clamping range

Repeatability

Max peripheral speed

Approx weight



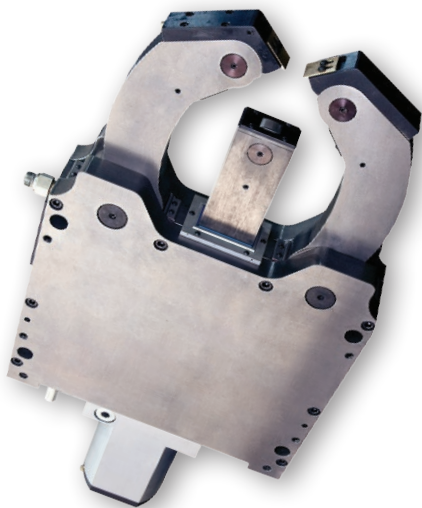
Model KRHS is a steady rest designed for crank shaft machining. Kitagawa-NorthTech can supply a full range of steady rests for crank shaft applications from automotive to heavy railway and marine.

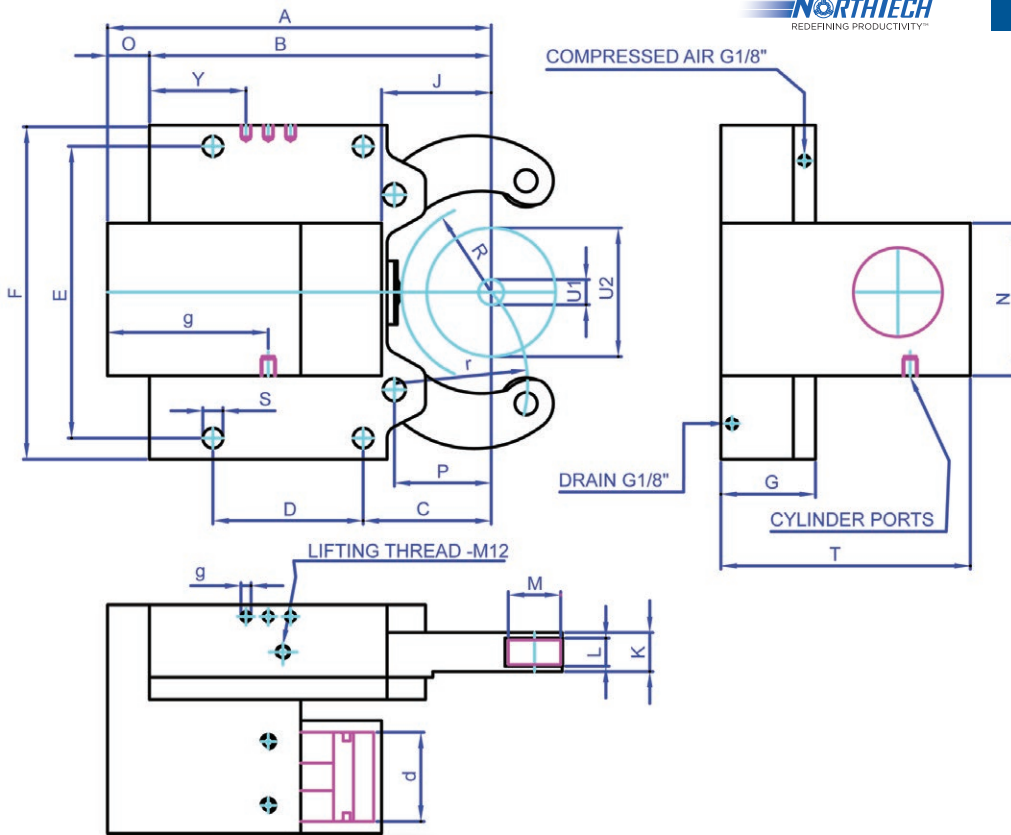
STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication
- Optional: Provision for coolant flush

STEADY REST TYPE

	KRHS315P	KRHS520D	KRHS528C	KRHS839	KRHS222	KRHS422	KRHS429	KRHS419	KRHS520K
A	503	620.5	730	804	279	621	621	621	613.5
B	331	442	515	595	189	437	437	437	442
C	138	180	178	255	70	146	146	146	180
D	135	210	270	270	85	240	240	240	210
E	266	330	400	400	170	365	365	365	330
F	300	370	450	440	190	400	400	400	370
G	80	67	102	110	57	79	79	79	70
I	100	118	102	108	69	72	72	72	100
J	31	40	40	37	—	33	33	33	31
K	22	26	32	40	22	22	29	19	29
L	14	16	20	20	12	13	16	10	18
M	35	40	62	62	35	52	52	52	52
N (dia)	132	132	147	137	—	122	122	122	132
P	114.5	160	160	216.5	58.5	128	128	128	160
Q	160.5	196	186	184	124	162	162	162	160.5
r	139.5	187.5	209	252	73	172	172	172	187.5
S	18	20	23	23	14	23	23	23	20
T	113	170	183	227	57.5	—	—	—	170
T1	25	27	32	23	17	—	—	—	27
T2	25	27	32	23	17	—	—	—	27
U1	40	45	70	80	8	30	30	30	50
U2	85	100	150	200	101	245	245	245	100
Max. axial opening	U	220	236	322	402	105	260	260	212
Clamping range with 3 piece chip guard	U1	40	45	70	80	8	30	30	50
	U2	85	100	150	200	101	245	245	100
Max. axial opening	U	220	236	322	393	105	260	260	212
Eccentric throw	R	110	120	155	195	55	127	127	108.2
Cylinder bore	Ød	80	80	80	80	50	60	60	80
Hydraulic connection (BSP)	e	1/4"	1/4"	1/4"	3/8"	1/4"	1/4"	1/4"	1/4"
Lubrication ports	g	M8X1	M8X1	M10X1	M10X1	1/8"	1/8"	1/8"	1/8"
Standard operating pressure	bar	5(30)	5(40)	5(55)	5(55)	5(70)	6(50)	6(50)	1(40)
Max. operating pressure	bar	35	45	60	60	70	55	55	55
Max clamp force/roller	daN	500	1000	1400	1400	450	470	470	830
Clamping pressure/roller at 6 bar	daN	100	100	100	100	45	56	56	100
Centering accuracy over entire clamping range	mm	0.04	0.05	0.05	0.05	0.02	0.04	0.04	0.05
Repeatability	mm	0.01	0.01	0.01	0.01	0.005	0.01	0.01	0.01
Max peripheral speed	m/min	500	525	350	350	920	720	720	720
Approx weight	kg	50	70	150	190	18.5	86	86	80



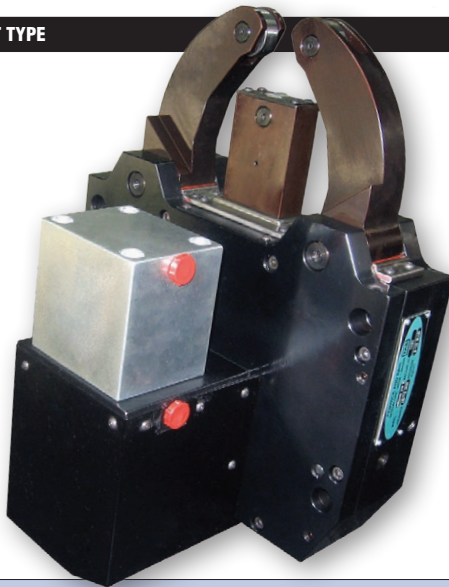


Specially designed for crank shaft machining with a space saving side mounted cylinder.

STANDARD FEATURES...

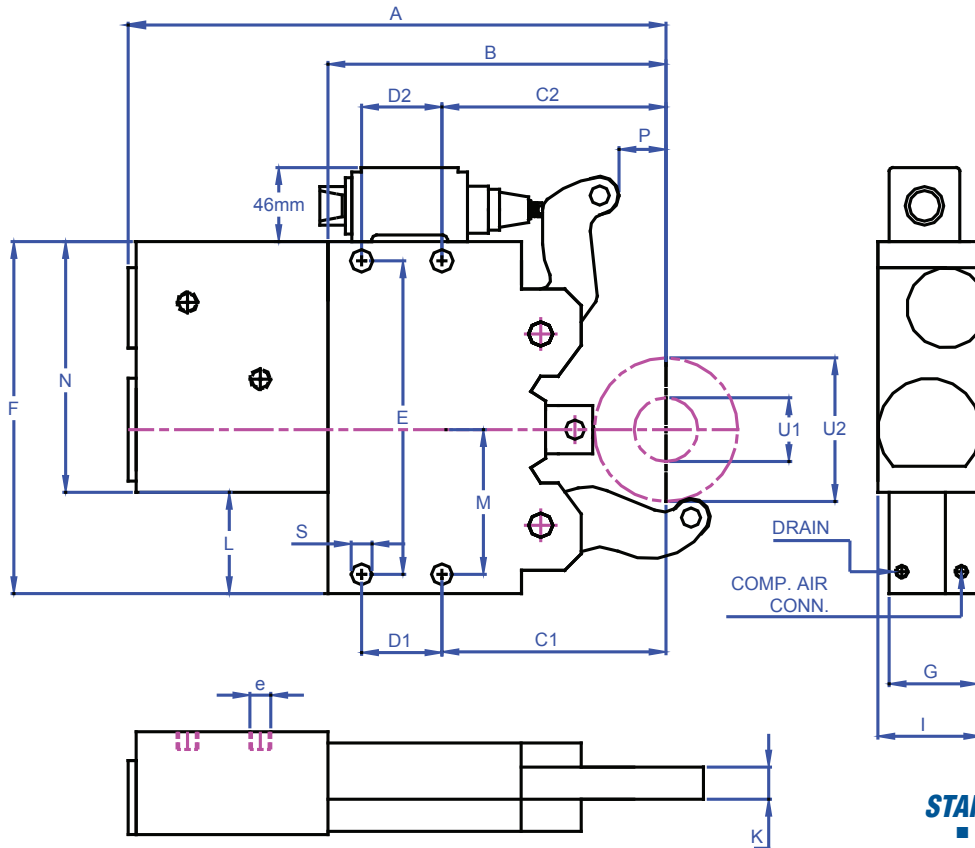
- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE



	KRSHS 315D	KRSHS 315H	KRSHS 510	KRSHS 521
A	355	367	334	340
B	331	363	296	340
C	138	170	103	133
D	135	135	135	135
E	266	266	266	288
F	300	300	300	315
G	80	85	82	89
J	108	135	83	110
K	22	29	22	28
L	14	18	14	18
M	35	47	35	47
N	123	129	129	139
O	24	1.6	38	0
P	108	140	73	110
r	139.5	174	115	144
S	M20 X 2.5P	18	M20 X 2.5P	18
T	205	210.5	206	224
Y	113	113	113	133
U1	40	70	45	54
U2	70	150	110	100
U	216	170	160	210
U1	40	70	45	54
U2	70	150	110	100
U	216	170	160	210
R	108	85	75	105
Ød	50	80	50	80
e	1/4"	1/4"	1/4"	1/4"
g	M8X1	M8X1	M8X1	M8X1
bar	5(30)	5(30)	5(30)	5(30)
bar	35	35	35	35
daN	500	520	240	520
daN	39	100	39	100
mm	0.04	0.04	0.04	0.04
mm	0.01	0.01	0.01	0.01
m/min	500	450	500	450
kg	50	50	40	55

Clamping range without chip guard	U1	40	70	45	54
Max. axial opening	U	216	170	160	210
Clamping range with chip guard	U1	40	70	45	54
Max. axial opening	U	216	170	160	210
Eccentric throw	R	108	85	75	105
Cylinder bore	Ød	50	80	50	80
Hydraulic connection (BSP)	e	1/4"	1/4"	1/4"	1/4"
Lubrication ports	g	M8X1	M8X1	M8X1	M8X1
Standard operating pressure	bar	5(30)	5(30)	5(30)	5(30)
Max. operating pressure	bar	35	35	35	35
Max clamp force/roller	daN	500	520	240	520
Clamping pressure/roller at 6 bar	daN	39	100	39	100
Centering accuracy over entire clamping range	mm	0.04	0.04	0.04	0.04
Repeatability	mm	0.01	0.01	0.01	0.01
Max peripheral speed	m/min	500	450	500	450
Approx weight	kg	50	50	40	55

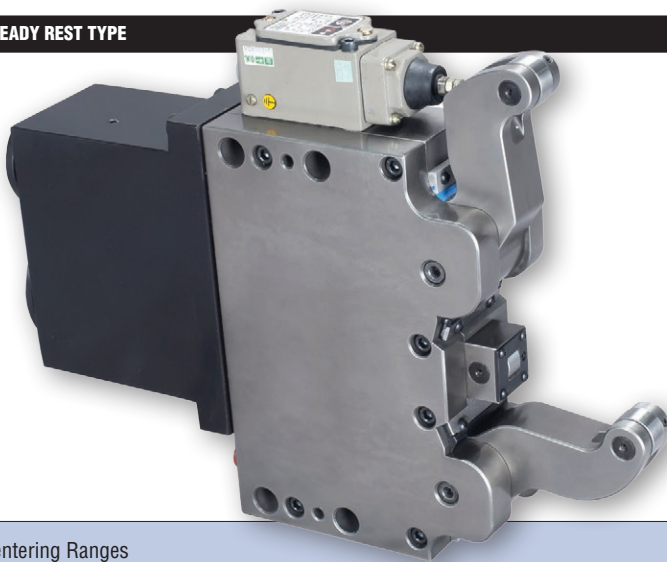


Steady rest with extra wide opening top arm for vertical loading.

STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE



Centering Ranges

Cylinder bore

Hydraulic connection (BSP)

Standard operating pressure

Max. operating pressure

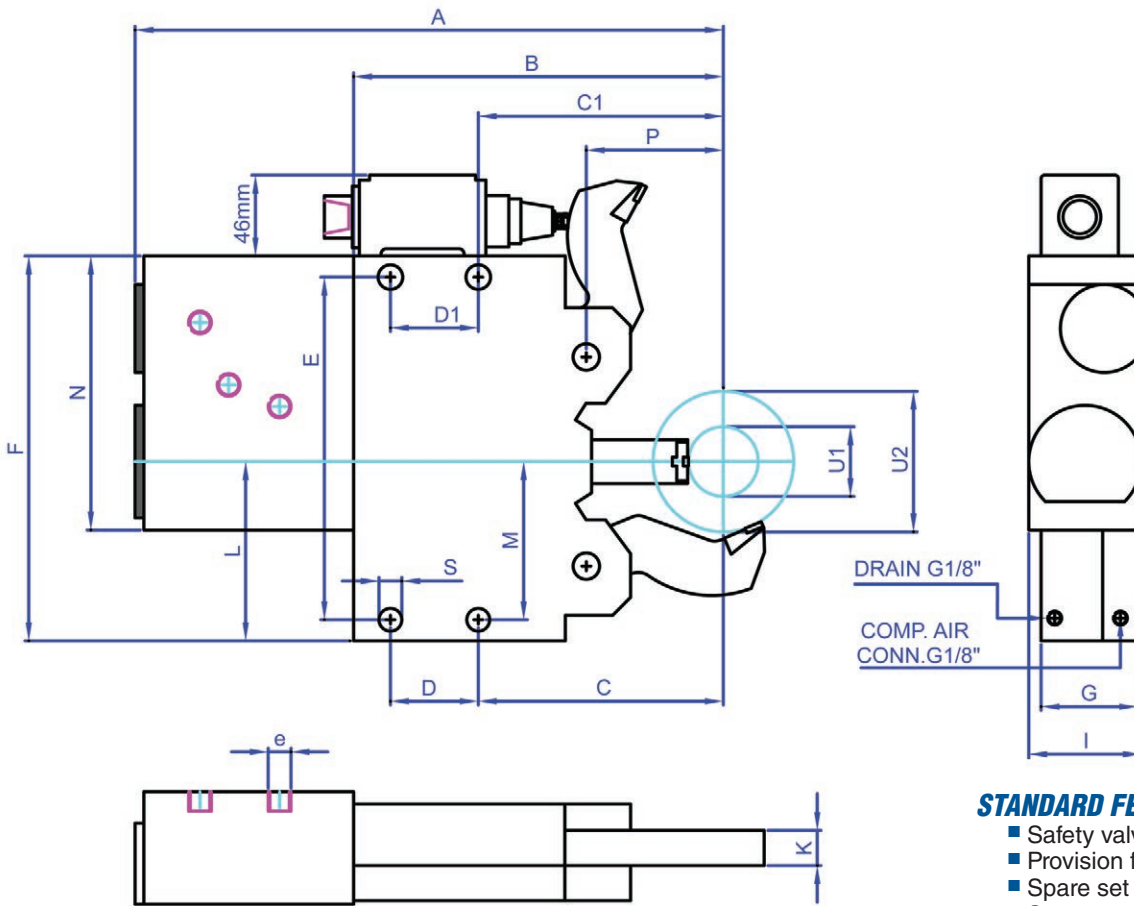
Max clamp force/roller

Clamping pressure/roller at 6 bar

Centering accuracy over entire clamping range

Repeatability

	VLHS 480	VLHS 480A	VLHS 7513
A	335	335	420
B	207	207	291
C1	139.5	139.5	155
C2	139.5	139.5	200
D1	50	50	105
D2	50	50	60
E	195	195	305
F	219	219	340
G	65	65	90
I	74	74	90
K	30	30	45
L	102	102	152.5
M	90	90	135
N	140	140	209
P	29	22	70
S	13	13	18
U1	40	15	75
U2	80	67	130
Ød	50	50	50
e	1/4"	1/4"	1/4"
bar	8(20)	8(20)	8(30)
bar	25	25	35
daN	150	150	200
daN	40	40	40
mm	0.02	0.02	0.02
mm	0.005	0.005	0.005

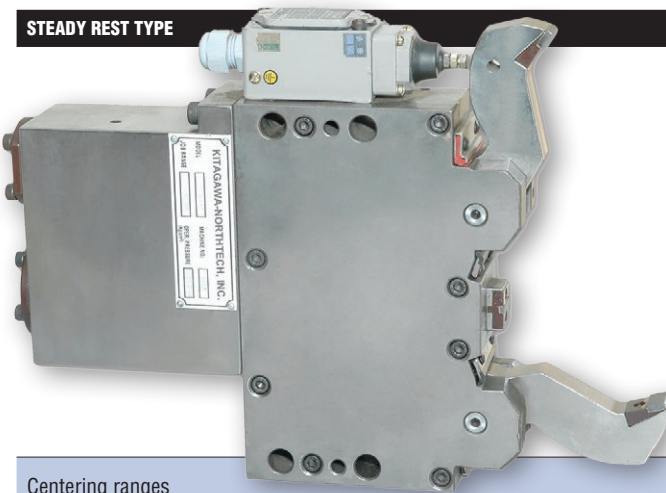


These steadies are for cylindrical and camshaft grinding. The series is designed to be used on machines where GHS series steadies cannot be used. It comes with a top arm which fully opens so as to load components to the machine center. The opening action can be identified through a sensor integrated into the steady itself.

STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE



	VGHS260	VGHS480	VGHS7513SP1	VGHS5013SP1
A	339	339	414.5	466.5
B	210	210.5	291	328
C	139	139.5	155	192
D	50	50	105	105
E	195	195	305	305
F	219	219	340	340
G	55	55	90	90
I	64	64	83	83
K	20	20	70	65
L	102	102	152.5	152.5
M	90	90	135	135
N	156	156	259	259
P	78	78	117	154
S	14	13	18	18
U1	20	40	75	50
U2	60	80	130	130
Cylinder bore	∅d	40	40	50
Hydraulic connection (BSP)	e	1/4"	1/4"	1/4"
Standard operating pressure	bar	3(15)	3(15)	5(15)
Max. operating pressure	bar	20	20	20
Clamp. Press./Pad at 6 bar	daN	25	25	39
Max. clamp pressure/pad	daN	100	100	130
Centering accuracy over entire clamping range	mm	0.005	0.005	0.01
Repeatability	mm	0.002	0.002	0.002
Approx weight	kg	17	17	40

Centering ranges

Cylinder bore

Hydraulic connection (BSP)

Standard operating pressure

Max. operating pressure

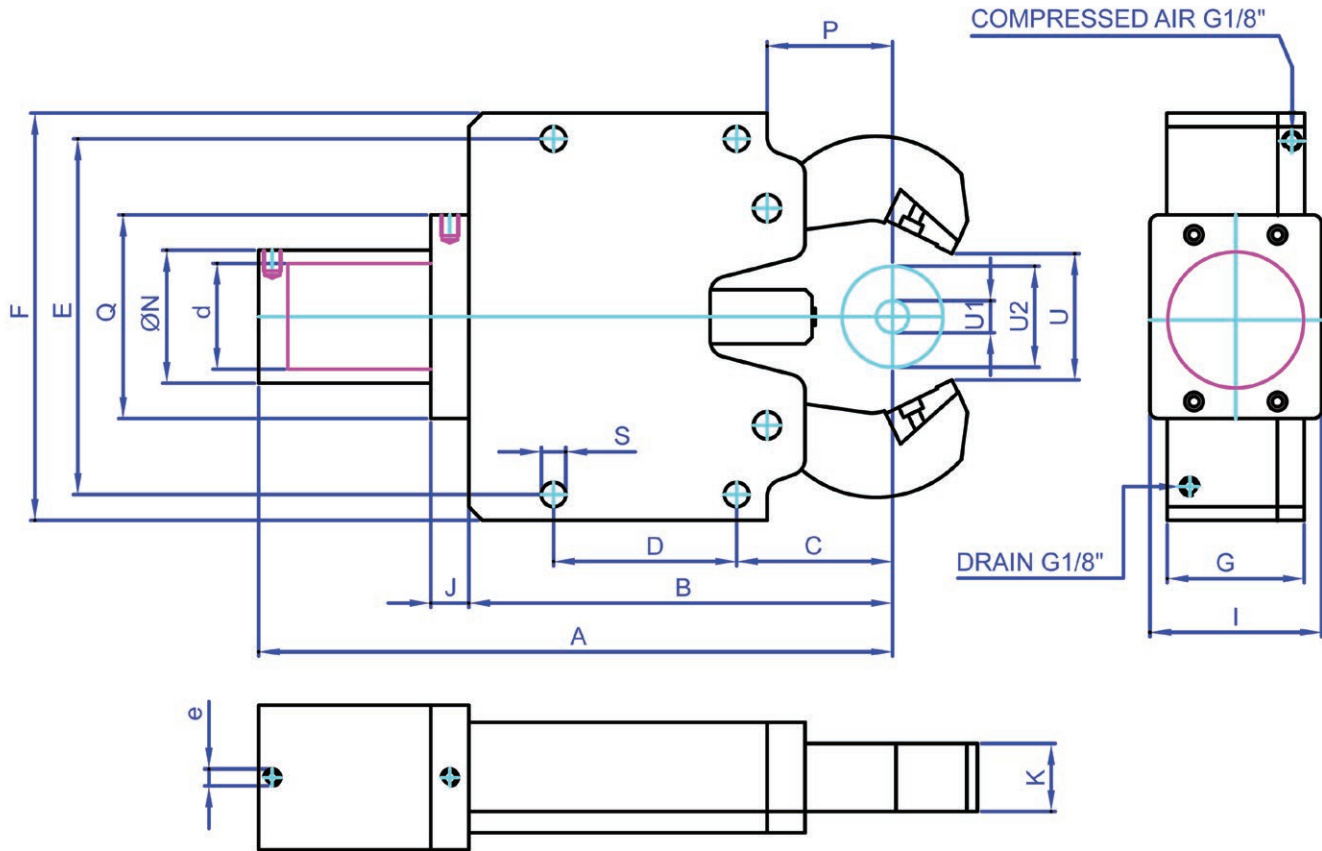
Clamp. Press./Pad at 6 bar

Max. clamp pressure/pad

Centering accuracy over entire clamping range

Repeatability

Approx weight

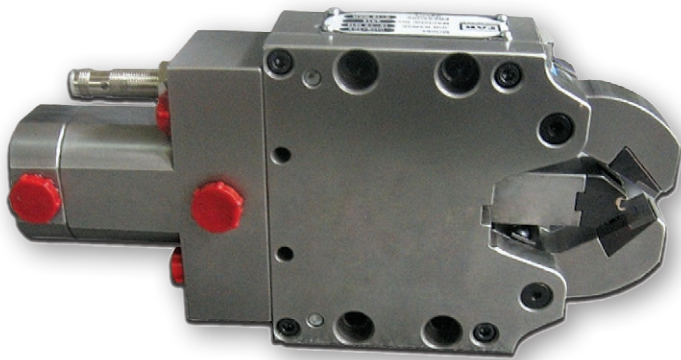


This series is for all standard grinding applications such as cylindrical grinding, camshaft grinding, camlobe grinding, etc. We also manufacture custom design to accommodate in-process gauge.

STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE



	GHS260E	GHS260H	GHS1012A	GHS103
A	241.5	221.5	463	241.6
B	146.5	146.5	312	141.5
C	56	56	115	73.5
D	65	65	135	35
E	128	128	262	106
F	146	146	300	123
G	44	44	85	50
I	44	44	85	50
J	23	23	25	35
K	32	20	45	20
N	44	82.5	65	55
P	44	46.5	93.5	44
Q	96	96	110	105
S	M12x1.75P	12	18	14 5/9
U1	20	15	10	12
U2	60	45	120	29
U	63	48	125	30
Ød	30	30	80	30
e	1/4"	1/4"	1/4"	1/4"
bar	1(10)	2(10)	2(15)	5(18)
bar	15	15	20	15
daN	25	25	100	25
daN	100	100	1000	100
mm	0.008	0.005	0.01	0.02
mm	0.003	0.002	0.003	0.003
kg	7	7	42	7

Clamping ranges

Max. axial opening

Cylinder bore

Hydraulic connection (BSP)

Standard operating pressure

Max. operating pressure

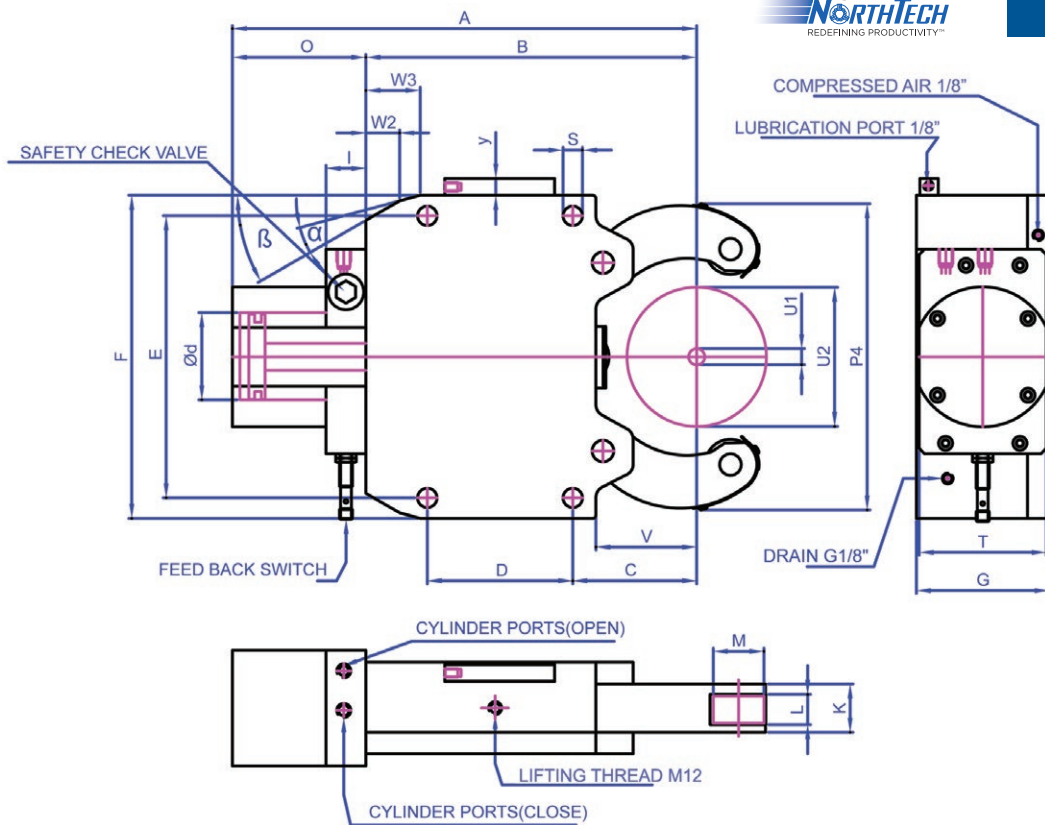
Clamp. Press./Pad at 6 bar

Max. clamp pressure/pad

Centering accuracy over entire clamping range

Repeatability

Approx weight



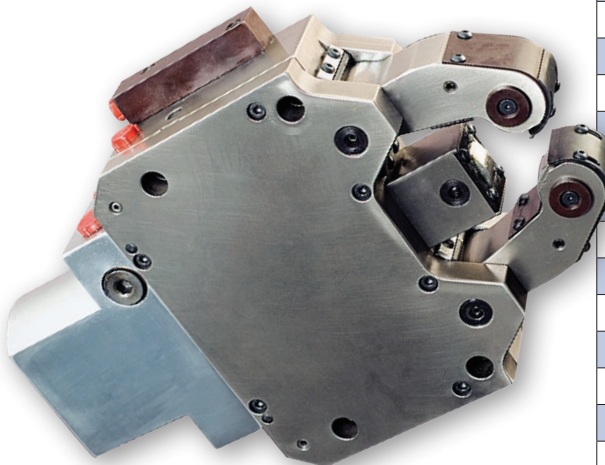
Compact steady rest to fit smaller machines.

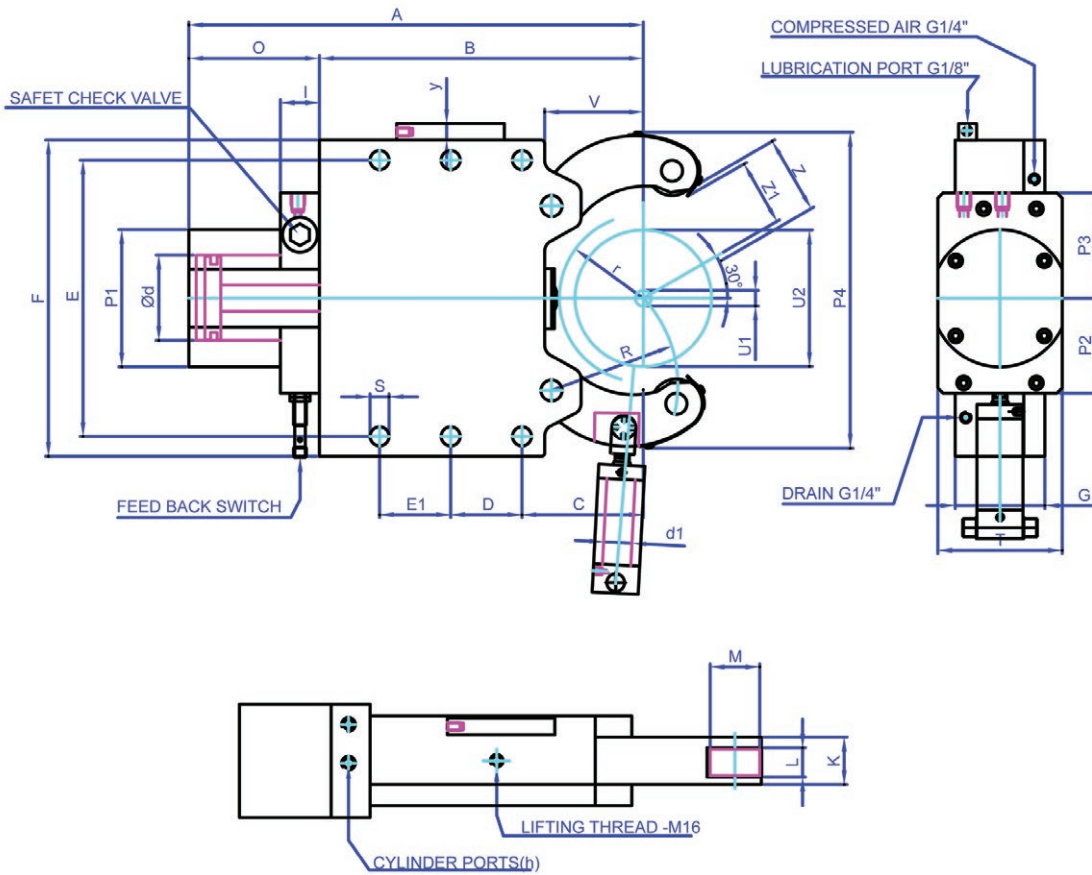
STANDARD FEATURES...

- Safety valve
- Provision for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE

	CS3	CS4	CS4.1	CS5	CS5.1	CS6	CS6.1
A	443	578	612	753	763	816	816
B	335	450	490	607	622	670	680
C	150	168	198	230	240	215	245
D	140	180	180	240	240	330	300
E	312	360	360	445	445	610	610
F	345	400	400	485	485	680	680
G	105	125	125	150	150	150	150
K	45	60	60	75	75	75	75
L	25	25	25	29	29	29	29
M	47	52	52	62	62	80	80
O	88	159	122	146	190	135	135
P4	392.5	476.5	503	574	632.5	752	752
S	18	23	23	23	23	27	27
T	105	111	124	146	121	150	150
V	115	146	171	195	195	185	215
W2	10	100	110	130	135	155	155
W3	50	62	60	51	55.5	87	87
β	30	30	30	30	30	30	30
α	15	15	15	15	15	20	20
Centering Range with chip guard	U1	65	60	90	80	100	215
	U2	235	280	330	390	410	510
Cylinder bore	Ød	70	90	90	100	100	120
Hydraulic connection (BSP)	h	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Operating pressure Min(Max)	bar	8(70)	8(70)	8(70)	8(80)	8(80)	8(80)
Max clamp force/roller	daN	1000	1500	1500	2000	2000	3000
Max. peripheral roller speed	m/min	700	700	700	725	660	700
Centering accuracy over entire clamping range	mm	0.04	0.05	0.05	0.06	0.06	0.06
Repeatability	mm	0.007	0.007	0.007	0.01	0.01	0.01
Approx weight	kg	40	90	90	170	180	385



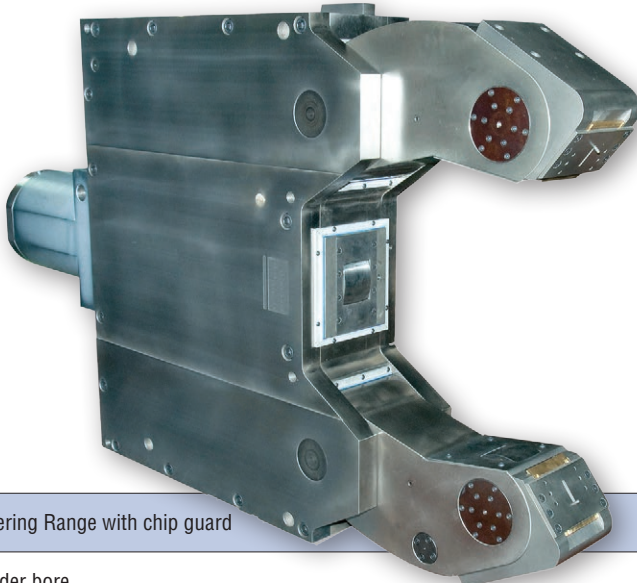


Heavy duty steady rest for component weight from 10 to 40 tons.

STANDARD FEATURES...

- Very heavy duty construction
- Large rollers that can handle 10-40 tons
- Hydraulic support of bottom arm for flat bed lathe use
- For use in turbine shafts, windmill shafts, and marine crank shafts
- Safety valves
- Provisions for max. opening feedback
- Spare set of chip guards
- Spare set of rollers
- Provision for compressed air connection
- Provision for centralized lubrication

STEADY REST TYPE	Application	HL80130	HS1060SAL	KRHS1540
		Standard Turning		Crank Shaft
A		2266	1564	1504.5
B		1760	1110	1176.5
C		680	358	462.5
D		310	525	365
E		1440	970	760
F		1500	1110	840
G		306	296	150
I		80	80	40
K		186	186	75
L		116	96	32
M		270	200	110
O		506	454	328
P4		1729	1069	1122
R		805	420	497
s		39	34	27
T		276	276	131
V		620	283	425.5
U1		600	100	150
U2		1050	520	400
Ød		200	200	100
Ød1		200	80	80
Max. load capacity	daN	30,000	12,000	4000
Cylinder support of bottom arm	daN	20,000	7,000	1500
Min(Max) pressure for bottom arm	daN	25(80)	20(75)	15(40)
Hydraulic connection (BSP)	h	1/2"	1/2"	3/8"
Operating pressure Min(Max)	bar	15(80)	10(60)	8(115)
Max clamp force/roller	daN	8300	6500	8300
Clamp pressure/roller at 15 bar	daN	1200	1200	500
Max. peripheral roller speed	m/min.	200	200	550
Centering accuracy over entire clamping range	mm	0.08	0.06	0.04
Repeatability	mm	0.01	0.01	0.01
Approx weight	kg	3000	2200	750



PRECISION COLLET CHUCKS



Quick Change Design For 1st or 2nd OP

QCRL S/66/80

QUICK CHANGE

- ▶ Grip range from 3 - 80mm
- ▶ Ideally suited for use with bar feeders
- ▶ Fixed length collet—no part movement
- ▶ Uses varibore, spring and master collets
- ▶ Exceptional accuracy in a small package

Secured Clamping With Pull Back Design



DHP

PULL BACK

- ▶ Grip range from 4 - 65mm
- ▶ Compact design and high accuracy
- ▶ Requires collet changing device
- ▶ Compatible with quick change collet clamping heads

Fixed Position = No Part Movement



DHF

FIXED LENGTH

- ▶ Grip range from 4 - 65mm
- ▶ Removable fixed stop in chuck bore
- ▶ High accuracy – ideal for second operation
- ▶ Requires collet changing device
- ▶ Compatible with quick change collet clamping heads

High Concentric Accuracy



CRL

LONG SERIES

- ▶ Grip range from 1.6 - 60mm
- ▶ Fixed length for all second operations
- ▶ Compact design for minimum overhang
- ▶ Interchangeable with Kitagawa B200 power chucks
- ▶ Complete with blank connector for threading to match drawtube

Maximize Lathe Work Envelope



CRS

SHORT SERIES

- ▶ Grip range from 3 - 66mm
- ▶ Ultra compact chuck design for first operation
- ▶ Ideally suited for use with barfeeders
- ▶ Bolt on cap
- ▶ Large capacity in small diameter and short length

Exceptional Accuracy in a Small Package

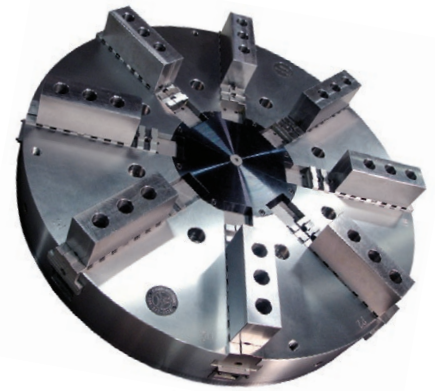
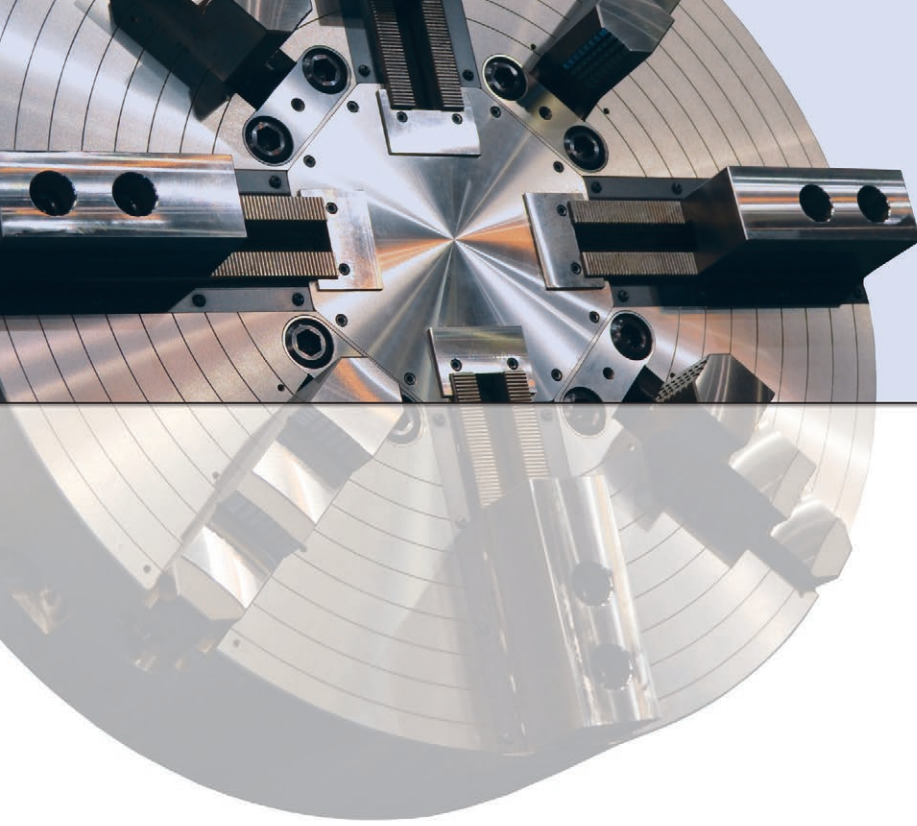


DEL

PULL BACK

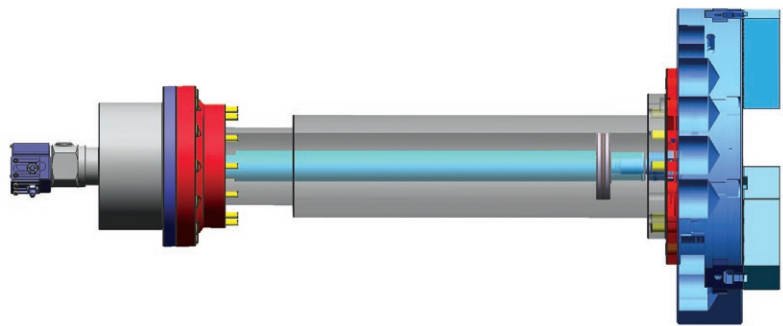
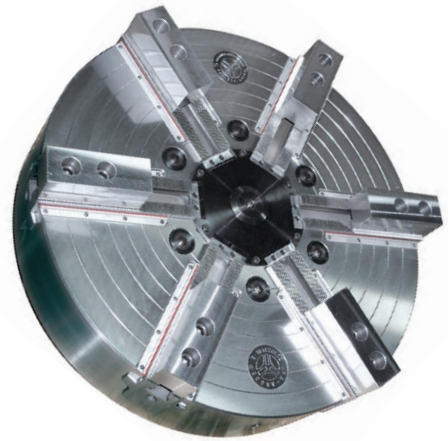
- ▶ Grip range from .5 - 42mm
- ▶ Pull back design for 1st operation
- ▶ Use 5C & 16C collets
- ▶ Ejectors available
- ▶ Collet wrench included with chuck

HIGH PERFORMANCE LARGE CHUCKS



Complete Turnkey Applications

- ▶ Available in 3, 4, 6 and 8 jaw configurations
- ▶ Sizes up to 63"
- ▶ Through hole up to 9"
- ▶ Closed center with vertical mounting sealing provisions
- ▶ Custom configurations available
- ▶ Installation available



TURNKEY CUSTOM ENGINEERED WORKHOLDING



| PRODUCTIVITY TEAM |

Product development experts dedicated to solving complex machining constraints that limit throughput and profits. Are you experiencing:

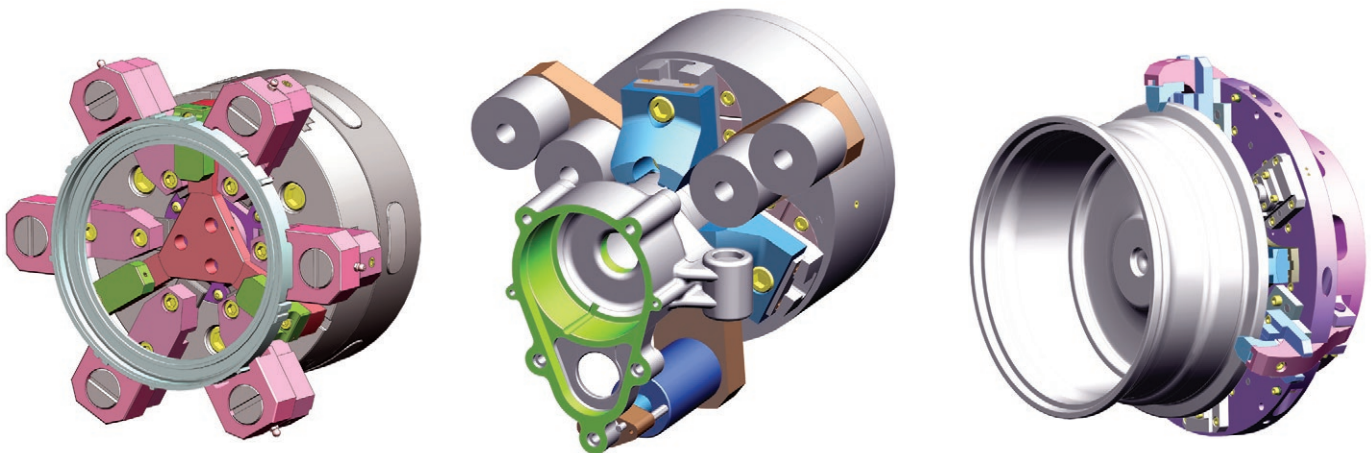
- ▶ High Scrap
- ▶ Thrown Parts
- ▶ Long Set-up Times
- ▶ Inconsistent Throughput
- ▶ Low Profits

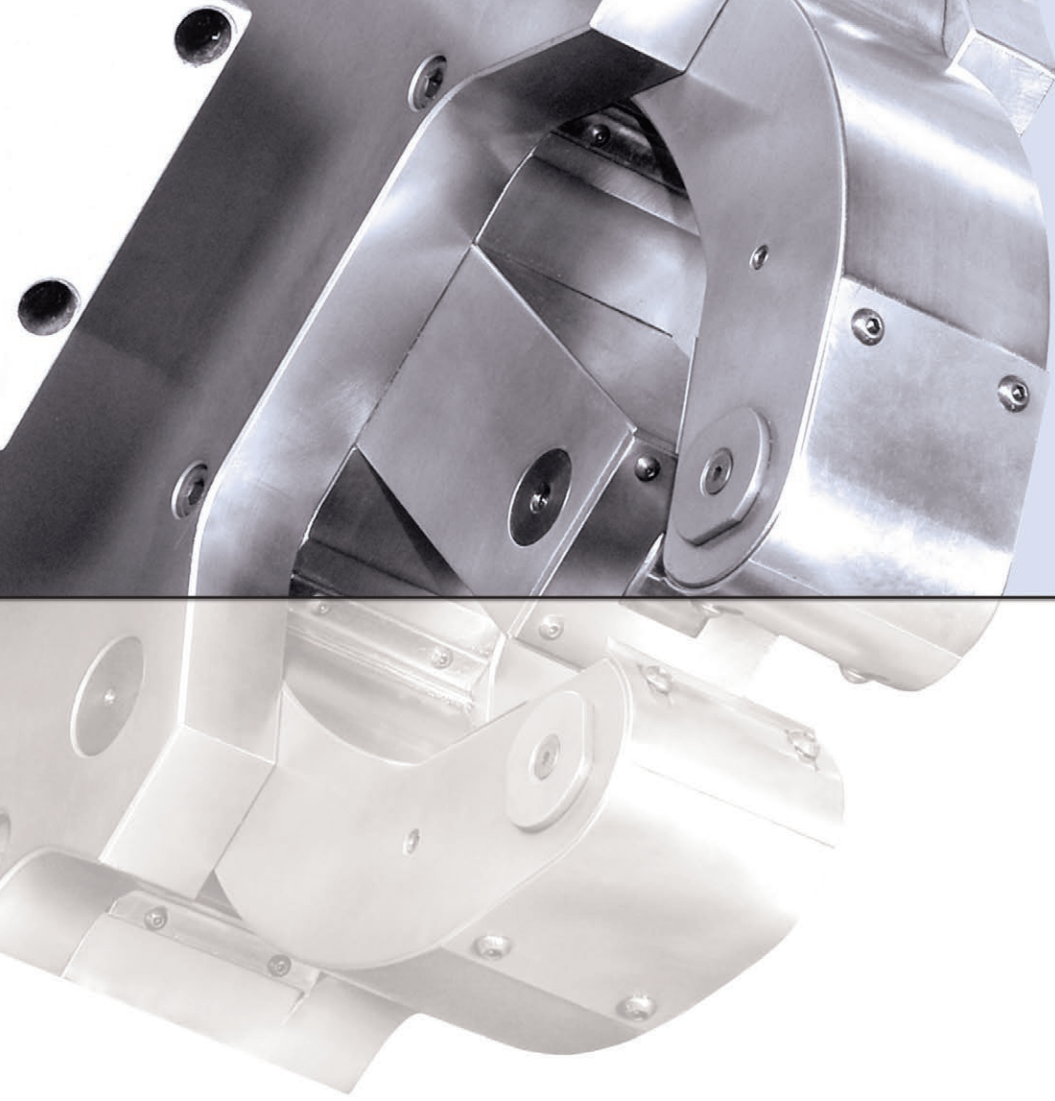
Common cause: Inefficient stability in current workholding
perpendicularity | parallelism | concentricity | flatness | total run out | circularity

Utilizing the latest in NX software, an in-house staff of highly skilled engineers and a commitment to help your operation *Redefine Productivity*, we will deliver game changing solutions to solve your most difficult machining challenges. Our team will identify deficiencies in your current workholding in relation to part drawings, machine used and production specs. Through diagnostic channels, a custom engineered solution will be proposed to match or exceed expectations.

Whether it's adding custom jaws and locators to production chucks or a fully custom fixture, we are your **productivity partner**.

Complete Turnkey Applications





STEADY RESTS



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