

Solid Disk Handwheels / Adjusting Collars

Solid Disk Handwheels

Shaft Bore Config.	Type		Hub		Handwheel	Handle Mounting Hole	Handle	Handle Thread	
	Stationary Handle	Folding Handle	Material	Surface Treatment				Material	Material
Without Hole	PHSN	PHSFN	Cast Iron Class No.30	Black Oxide	Phenol	Brass	Phenol	1212 Carbon Steel	Trivalent Chromate
	AHSN	AHSFN	Aluminum Casting Alloy 514.0	—	Aluminum Alloy	Aluminum Alloy			
H9 Hole + Tapped	PHSM	PHSFM	Cast Iron Class No.30	Black Oxide	Phenol	Brass	Phenol	1212 Carbon Steel	Trivalent Chromate
	AHSM	AHSFM	Aluminum Casting Alloy 514.0	—	Aluminum Alloy	Aluminum Alloy			
H9 Hole + Keyway + Tap	PHSK	PHSFK	Cast Iron Class No.30	Black Oxide	Phenol	Brass	Phenol	1212 Carbon Steel	Trivalent Chromate
	AHSK	AHSFK	Aluminum Casting Alloy 514.0	—	Aluminum Alloy	Aluminum Alloy			

⊙ d is a through hole.

⊙ Stationary Handles are GRW P.3202
 ⊙ Fold-Down Revolving Handles P.3202 ⊙ Both Stationary Handles and Fold-Down Revolving Handles make rotation.

Part Number	PHSM / PHSFM / AHSN / AHSFN		PHSK / PHSFK / AHSK / AHSFK		H	A	F	D ₁	D ₂	h	L	d ₁	h ₁	M (Coarse)	P	B				G				Mass (g)			
	Type	D	d	M ₁ (Coarse)												d	b	t	PHS _{AHS}	PHSF _{AHSF}	PHS _{AHS}	PHSF _{AHSF}	PHS _{AHS}	AHS _{AHS}	PHSF _{AHSF}	PHS _{AHS}	AHS _{AHS}
Phenol	PHSN	PHSFN	80	10	5	10	3	1.4	35	13	15	28	36	14	30	24	9	8	34	40	55	181	201	200	220		
Phenol Resin	PHSM	PHSFM	100	12		12	4	1.8	40	15	17	32	39	36	36	41	20	20	41	20	20	277	324	296	343		
Cast Iron Class No.30	PHSK	PHSFK	125	12 / 16		15	5	2.3	44	19	19	39	46	15	38	52	23	23	52	23	23	55	81	405	468	428	491
Aluminum	AHSM	AHSFM	150	15 / 20	6	15	5	2.3	48	18	21	48	15	38	64	23	23	64	23	23	67	104	570	729	618	777	
Aluminum	AHSN	AHSFN	*175	16 / 20		16	5	2.3	53	19	24	56	15	31	11	74	10	10	74	10	10	75	104	859	—	907	—
Aluminum	AHSK	AHSFK	*200	16 / 20		16	5	2.3	57	21	27	48	15	31	11	86	10	10	86	10	10	75	104	1017	—	1062	—

*D175 and D200 are not available for Aluminum Type. ⊙ PHSN175 has been discontinued.

⊙ Part Number Example: **PHSN80** - d

⊙ Part Number Example: **PHSM100** - 12

New JIS (B1301) Keyway Dimensions

d _{H9}	W	b ₂₀₀	t ^{±0.1}		
10	+0.036 0	11.4	3	±0.0125	1.4
12	—	13.8	4	—	1.8
15	+0.043 0	17.3	5	±0.0150	2.3
16	—	18.3	5	—	—

Adjusting Collars

Type	Material		Surface Treatment
	Right-Hand	Left-Hand	
SCOR	SCOL	5056 Aluminum Alloy	Black Anodize

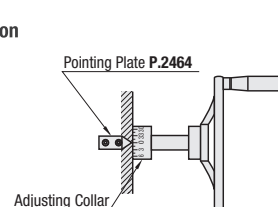
⊙ The scale engraving angle can be selected from either 10° or 15°.

⊙ Angle selection 10° is shown in the diagram.

⊙ Part Number Example: **SCOR35** - 10

Part Number	Type	D	Angle	d	Mass (g)
SCOL Left	SCOR Right	22	10	15	8
SCOL Left		27			25
SCOL Left		35			40
SCOL Left		45			72

⊙ Part Number Example: **SCOR35** - 10



Handwheels

Folding / Flat

Folding Handwheels

Type	Handwheel		Hub		Handle	Handle Thread		Included Screw	
	Material	Surface Treatment	Material	Surface Treatment		Material	Material	Surface Treatment	Material
PHSLN	Phenol	—	1018 Carbon Steel or Equivalent	Black Oxide	Phenol	1018 Carbon Steel or Equivalent	Trivalent Chromate	Structural Alloy Steel	Trivalent Chromate
AHSLN	FCD Cast Iron500 Cast Iron (JIS)	Chrome Plating	FCD Cast Iron500 Cast Iron (JIS)	Chrome Plating					

⊙ Handles are GRMLM P.3203

Hex Socket Head Cap Screw

Part Number	Type	D	H	A	d	L		h	M (Coarse)	P		B	G	Mass (g)	
						PHSLN	AHSLN			PHSLN	AHSLN			PHSLN	AHSLN
PHSLN Phenol Resin AHSLN Cast Iron Class No.30	80	34.2	20	20.5	16.5	16.5	10	5	30	29	18	42	100	410	
	100	37.5	20	25.2	18.5	18.5	12.2	5	39	38	18	42	152	640	
	125	48	25.5	32	26	26	15.7	6	50.5	48.5	23	67.5	296	1250	
	140	50.5	25.5	36	29	28.5	17.5	6	54	54	23	67.5	404	1670	
	160	56.9	28.5	40.5	33	33	19.9	8	62.7	62.7	26	82.5	594	2500	

Flat Handwheels

Type	Handwheel	
	Material	Surface Treatment
AHNF	Cast Iron Class No.30	Chrome Plating

⊙ Handles are separately sold.

Part Number	Type	D	H	A	d	M	P	Reference Mass (g)	Applicable Handle
AHNF	80	24	14	25	5	26.5	386	GRMK13	
	100	25	15	30	5	37	618	GRMK13	
	125	29	16	35	6	48	985	GRMK16	
	140	30	17	35	6	55	1287	GRMK16	
	160	33	18	38	8	62.5	1735	GRMK20	
	180	35	20	38	8	71.5	2313	GRMK20	
	200	37	22	40	10	78.5	3511	GRMK25	

⊙ Part Number Example: **PHSLN80** - (HC / KC / SC)

⊙ Part Number Example: **AHSLN100** - (HC / KC / SC)

⊙ Part Number Example: **AHNF140** - (HC / KC / SC)

⊙ Part Number Example: **PHSLN125** - (HC / KC / SC)

⊙ Part Number Example: **AHSLN160** - (HC / KC / SC)

⊙ Part Number Example: **AHNF80** - (HC / KC / SC)

Alterations	H8 Hole + Tapped Hole Machining	H8 Hole + Keyway + Tapped Hole Machining	Square Hole Machining																																																																																																						
Code	HC	KC	SC																																																																																																						
Spec.	Adds an H8 hole at hub center, and two tapped setscrew holes. HC=1 mm Increment Ordering Code: HC16 Not available for PHSLN160-KC22	Adds an H8 hole at hub center, a key groove and its tapped hole. KC = 1mm Increment Ordering Code: KC15	Adds a square hole at hub center. SC = 1mm Increment Ordering Code: SC12																																																																																																						
	<table border="1"> <thead> <tr> <th>D</th> <th>HC (H8)</th> <th>h</th> <th>HC (H8)</th> <th>M (Coarse Thread)</th> </tr> </thead> <tbody> <tr> <td>80</td> <td>6-10</td> <td>6</td> <td>6-9</td> <td>4</td> </tr> <tr> <td>100</td> <td>6-13</td> <td>7</td> <td>10-16</td> <td>5</td> </tr> <tr> <td>125</td> <td>6-14</td> <td>7</td> <td>17-19</td> <td>6</td> </tr> <tr> <td>140</td> <td>6-22</td> <td>8</td> <td>20-25</td> <td>8</td> </tr> <tr> <td>160</td> <td>6-25</td> <td>8</td> <td>—</td> <td>—</td> </tr> </tbody> </table>	D	HC (H8)	h	HC (H8)	M (Coarse Thread)	80	6-10	6	6-9	4	100	6-13	7	10-16	5	125	6-14	7	17-19	6	140	6-22	8	20-25	8	160	6-25	8	—	—	<table border="1"> <thead> <tr> <th>D</th> <th>KC (H8)</th> <th>M</th> <th>h</th> <th>KC (H8)</th> <th>b</th> <th>Tolerance</th> <th>t</th> </tr> </thead> <tbody> <tr> <td>80</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>100</td> <td>10</td> <td>5</td> <td>6</td> <td>10</td> <td>3</td> <td>±0.0125</td> <td>1.4</td> </tr> <tr> <td>125</td> <td>10-12</td> <td>5</td> <td>6</td> <td>11, 12</td> <td>4</td> <td>±0.015</td> <td>1.8</td> </tr> <tr> <td>140</td> <td>10-17</td> <td>5</td> <td>8</td> <td>13-17</td> <td>5</td> <td>±0.015</td> <td>2.3</td> </tr> <tr> <td>160</td> <td>10-20</td> <td>6</td> <td>10</td> <td>18-22</td> <td>6</td> <td>±0.015</td> <td>2.8</td> </tr> </tbody> </table>	D	KC (H8)	M	h	KC (H8)	b	Tolerance	t	80	—	—	—	—	—	—	—	100	10	5	6	10	3	±0.0125	1.4	125	10-12	5	6	11, 12	4	±0.015	1.8	140	10-17	5	8	13-17	5	±0.015	2.3	160	10-20	6	10	18-22	6	±0.015	2.8	<table border="1"> <thead> <tr> <th>D</th> <th>SC</th> <th>SC</th> <th>Tolerance</th> </tr> </thead> <tbody> <tr> <td>80</td> <td>—</td> <td>10-14</td> <td>±0.1</td> </tr> <tr> <td>100</td> <td>10</td> <td>—</td> <td>—</td> </tr> <tr> <td>125</td> <td>10</td> <td>—</td> <td>—</td> </tr> <tr> <td>140</td> <td>10-12</td> <td>—</td> <td>—</td> </tr> <tr> <td>160</td> <td>10-14</td> <td>—</td> <td>—</td> </tr> </tbody> </table>	D	SC	SC	Tolerance	80	—	10-14	±0.1	100	10	—	—	125	10	—	—	140	10-12	—	—	160	10-14	—	—
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