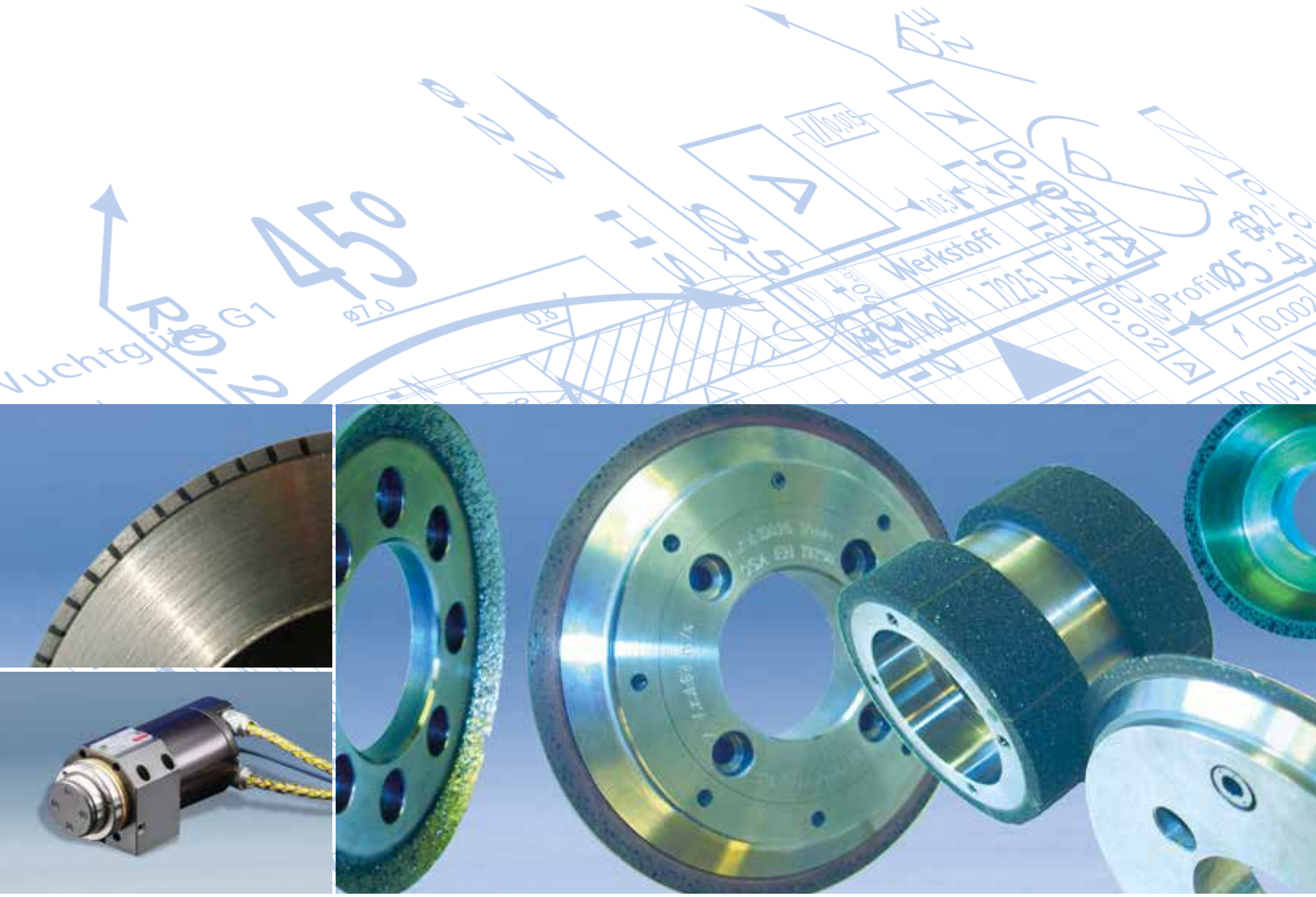
CNC Dressing Discs



Precision Engineering Solutions

WINTER
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CNC Dressing Discs

CNC dressing discs can be used as an alternative to full form diamond dressing rolls by allowing the user to generate profiles using the capability of the CNC machine, enabling complex grinding wheel profiles and cylindrical grinding wheels of differing widths to be dressed effectively.

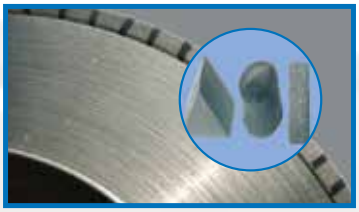
The discs use both natural and synthetic diamond incorporating the latest developments in diamond processing technologies. Both individual and/ or 'bulk' stones can be used, with the diamond layer being fixed in a sintered free standing metal body to give maximum product performance. The discs specification will be dictated by the application.

Advantages of CNC dressing:

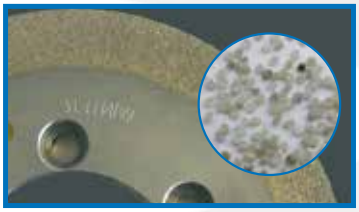
- A versatile dressing tool, particularly for small to medium batch sizes and prototyping
- Design is not specific to individual work pieces
- Constant effective dressing width
- Automation of the dressing process
- Reproducible high precision with low work piece rejects
- Discs can be re-lapped/re-profiled

Diamond Types

Individual Reinforcing Pieces



Bulk Stones



Markets

- Automotive Industry
- Turbine Industry
- Wind Farms
- Gear Industry

Applications

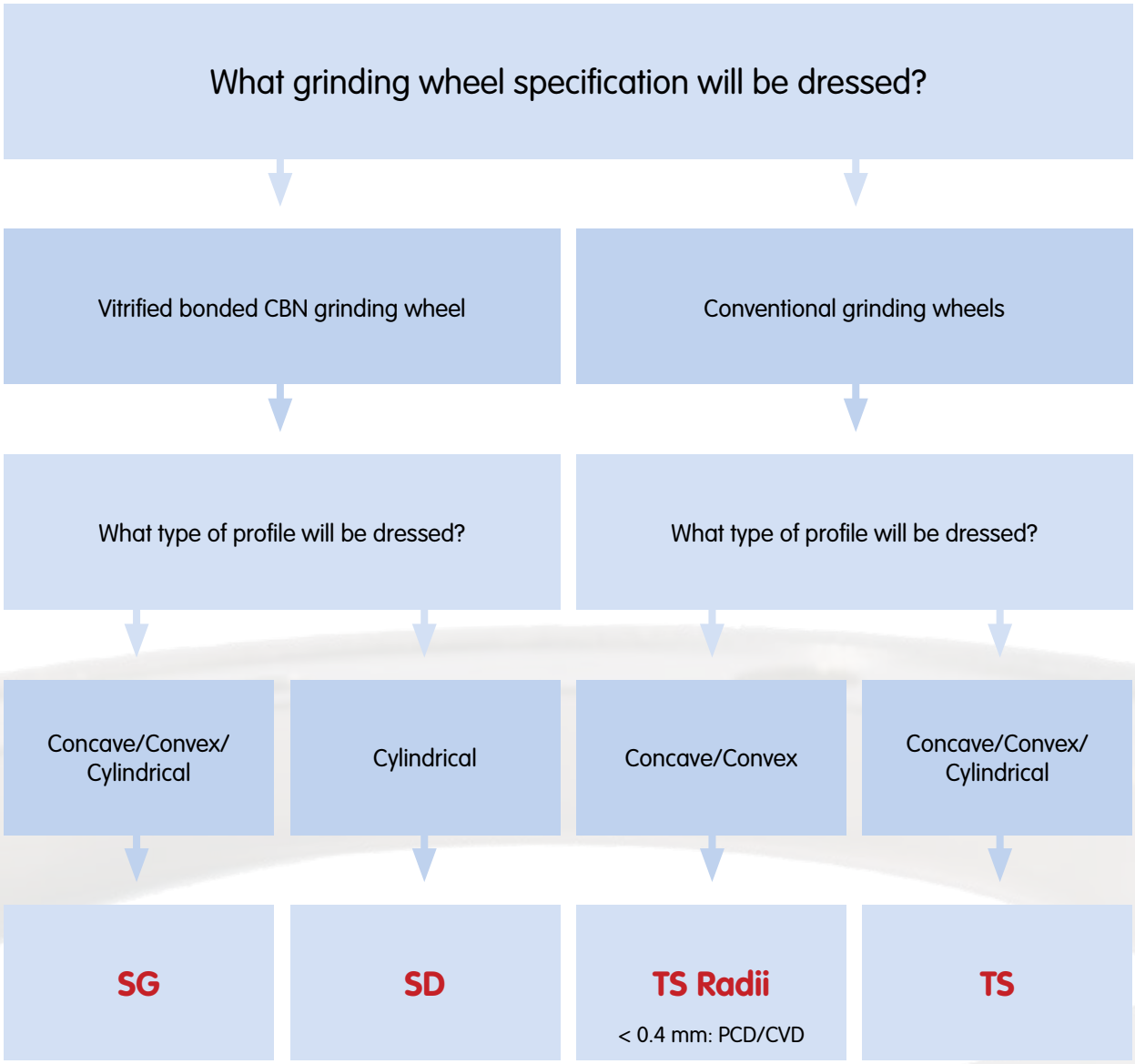
- Peel grinding
- Form grinding
- Centreless grinding
- Drill flute grinding

Types of rotary CNC dressing discs

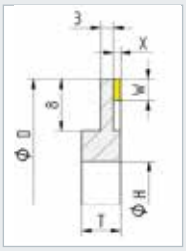
	Type	Manufacture	Grit density	Description	Advantages
	SG	Positive process	Maximum	Positive electroplated SG dressing discs are characterized by a single layer of diamonds arranged radially, offering a constant effective dressing width.	• Statistical diamond distribution gives maximum diamond concentration • Exceptional running truth accuracy is achieved through the finish of the diamond coating • Constant diamond layer widths due to single layer of diamond particles
	TS	Reverse process	Controlled or Maximum	Infiltrated dressing discs are characterized by high wear resistance and consist of a single layer diamond coating.	• Both random and controlled diamond concentration • Extremely high accuracy as the diamond coating is ground • Individually selected diamonds reinforce small radii • Edge reinforcements can be used to increase the wear resistance
	PCD/CVD/ MCD	Reverse process	Controlled	Infiltrated versions of CNC dressing discs, with CVD PCD or MCD segments are particularly suitable for dressing very small radii.	• Controlled concentration • Extremely high accuracy as the diamond coating is ground • Can be re-profiled many times
	SD	Positive process	Controlled	The metal bonded sintered SD dressing discs consist of a multi-layer coating that can be reground and sharpened many times. SD discs are highly suitable for centerless cylindrical applications with very fine surface requirements.	• Statistical diamond distribution • Controlled diamond concentration • Extremely high accuracy as the diamond layer is ground • Constant effective dressing width, dependant on the design

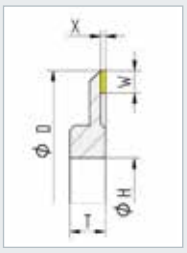
Which one to choose?

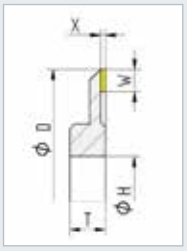
This diagram is intended to assist technical users in the selection of the correct dressing tool. The selection does not depend just on the machine settings and grinding wheel specification, but also on the geometry to be dressed and the surface finish to be achieved on the workpiece. This diagram is no more than a rough guideline and recommendation.

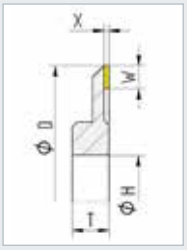


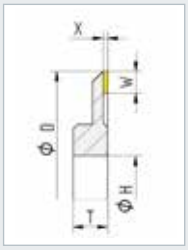
Range of SG dressing discs in stock

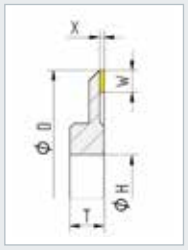
SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	302SG71P	100	0,6	5	20	25	H6	D602	Bronze	00310337534	Semi-manufactured part
	310SG71P	120	0,6	5	20	25	H6	D602	Bronze	00310337535	Semi-manufactured part
	305SG71P	150	0,6	5	20	25	H6	D602	Bronze	00310337536	Semi-manufactured part
	Machine: Universal application —> after suitable adaptation of the body it can be used on all machines (e.g. bores 40, 52, 56 mm etc.) Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock, 2 weeks for adapting the bore, body width and fastening holes if necessary										

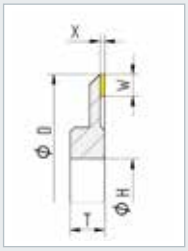
SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	5SG71P	110	0.4	5	10.5	75	H3	D426	Steel	66260136400	
	Machine: e.g. Junker Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

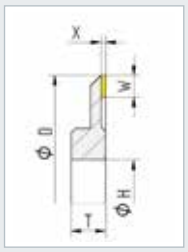
SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	2SG71P	110	0.4	5	10	75	H3	D426	Bronze	66260372485	
	Machine: e.g. Junker Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

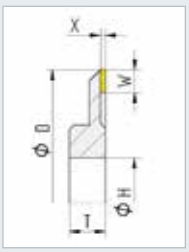
SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	SG71P	110	0. 8	5	10.85	75	H3	D852	Bronze	66260129200	
	Machine: e.g. Junker Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

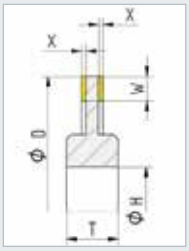
SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	306SG71P	120	0.4	5	19	52	H3	D426	Steel	66260347760	Case-hardened bore
	Machine: e.g. Landis Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	1SG71P	130	0.6	10	12	50	H3	D602	Steel	66260116525	
	Machine: e.g. Schaudt Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

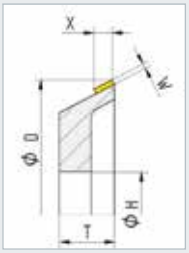
SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	1SG71P	140	0.6	5	12	50	H3	D602	Bronze	66260334649	
	Machine: e.g. Schaudt Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	302SG71P	140	0.6	5	12	50	H3	D602	Steel	69014159716	Hardened body
	Machine: e.g. Schaudt Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

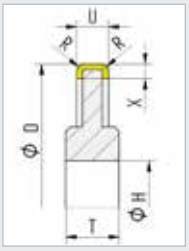
SG 40	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	303SG71P	150	0.4	5	19	52	H3	D426	Steel	66260355740	Case-hardened bore
	Machine: e.g. Landis Application: Dressing of conventional and vitrified bonded cBN grinding wheels Delivery: Ex stock										

SG 50	Design code	D	X	W	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	SG71P	150	1.2	10	50	56	H3	D602	Steel	66260132775	Case-hardened bore

Machine: e.g. Naxos
Application: Dressing of conventional and vitrified bonded cBN grinding wheels
Delivery: Ex stock

SG 60	Design code	D	W	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	SG71P	110.8	0.8	8	18	75	H3	D852	Steel	66260127188	

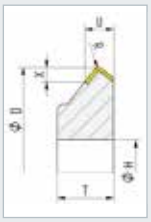
Machine: e.g. Junker
Application: Dressing of conventional and vitrified bonded cBN grinding wheels
Delivery: Ex stock

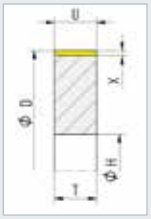
SG 99	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	SG71P	173	3	3	16	50	H3	D602	Steel	66260131884	R = 0.3 / ∢ 3°*

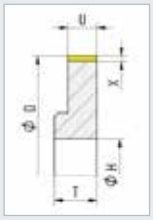
Machine: e.g. Schaudt
Applications: Dressing conventional grinding wheels
Delivery: Ex stock

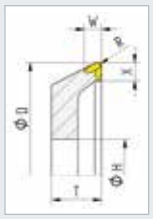
* This refers to the conicity of the outer diameter

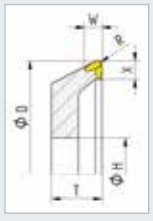
TS dressing discs held in stock

TS 20	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	TS71P	140	3.4	2.6	20	60	H3	D602	Steel	66260387514	R = 0.3
	Machine: e.g. Buderus Applications: Dressing conventional grinding wheels Delivery: Ex stock										

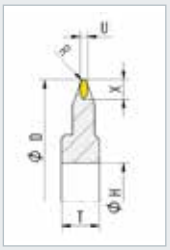
TS 30	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	TS71Z	65	8	0.8	8	43	H3	D852	Steel	66260382820	Cylindrical
	Machine: e.g. Giustina Applications: Dressing conventional grinding wheels Delivery: Ex stock										

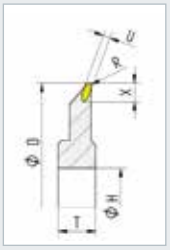
TS 30	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	2TS71P	85	10	0.8	13	43	H3	D852	Steel	66260381629	Cylindrical
	Machine: Universal Applications: Dressing conventional grinding wheels Delivery: Ex stock										

TS 60 N	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	UTS71P	50	3	3	25	20	H3	Needles	Steel	66260388125	R = 0.4
	Machine: e.g. Buderus Applications: Dressing conventional grinding wheels Delivery: Ex stock										

TS 60 N	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	TS71P	100	3	3	21	40	H3	Needles	Steel	69014181275	R = 0.5
	Machine: e.g. Klingelnberg Applications: Dressing conventional grinding wheels Delivery: Ex stock										

Designs with CVD held in stock

TS 10 N	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	YTS71P	100	0.71	1.5	12	40	H3	CVD	Steel	60157698362	R = 0.10 ∢ 40°
	Machine: Applications: Delivery:		e.g. Studer Dressing conventional grinding wheels Ex stock								

TS 20 N	Design code	D	U	X	T	H	Bore tolerance	Grit size	Body	Order number	Comment
	YTS71P	100	0.67	1.5	12	40	H3	CVD	Steel	60157698367	R = 0.25 ∢ 40°
	YTS71P	100	1.07	1.5	12	40	H3	CVD	Steel	60157698368	R = 0.50 ∢ 40°
	YTS71P	120	0.67	1.5	12	40	H3	CVD	Steel	60157698370	R = 0.25 ∢ 40°
	YTS71P	120	1.07	1.5	12	40	H3	CVD	Steel	60157698369	R = 0.50 ∢ 40°
	Machine: Applications: Delivery:		e.g. Studer Dressing conventional grinding wheels Ex stock								

Checklist

for CNC dressing discs

Customer:	
Customer no.:	

Machine

Machine type:	
Maximum acceptable dressing disc diameter (mm):	
Current dressing tool:	

Dressing unit

Arbor diameter (mm):	
Arbor length (mm):	

Workpeice

Workpiece drawing:	
Surface finish desired:	
Grinding allowance (mm / Ø):	

Grinding wheel

Specification:	
Dimensions:	

Parameters

Profile or straight dressing:	
Grinding wheel circumferential speed (m/s) or speed (rpm):	
Circumferential speed of dressing disc (m/s) or speed (rpm):	
Counter-directional (GGL) / uni-directional dressing (GL):	
Radial infeed per dressing pass (a_{ed}):	
Axial dressing feed (f_{ad}):	

Notes

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