

TUNNELING AND GEOTECHNICAL SYSTEMS





Technical Data	Unit	R25	R32L	R32N	R32S	R38	R51N	T76N	T76S	T103N	T103S
Outer diameter	mm	25	32	32	32	38	51	76	76	103	103
Average inner diameter	mm	14	22	18.5	15	19	33	51	45	75	53
Average cross sectional area	mm²	314	341	471	547	768	1217	2468	2800	3450	5200
Ultimate load **	kN	200	220	280	360	500	800	1600	1900	2380	3550
Yield load **	kN	150	180	230	280	400	630	1200	1500	1900	2720
Average tensile strenght **	N/mm²	690	650	650	690	650	750	840	790	690	680
Average yield strenght **	N/mm²	520	530	530	540	520	590	630	630	560	520
Weight	kg/m	2.1	2.9	3.5	4.2	6.0	9.5	19.7	22.6	27.3	42
Thread standard	–	ISO 102008					ISO 1720	Internal standard			
Steel grade	–	Acc. to. EN 10083-1									
Delivery lenghts	m	1, 2, 3, 4, 6						1, 2, 3, 4		2, 3	

^{**} The ultimate load and yield load capacity are measured values. The tensile-/yield strenghts are calculated average values.



Advantages and Characteristics

the main advantages of the GSI Anchor bar are:

Fast drilling and placing due to drilling, anchor installation and grouting in a single operation

Neither separate anchor installation nor removal of casing and drill rods

Similar installation methods for all ground conditions

Choice of drill bits for different ground conditions

The hollow core not only serves for flushing with air or water during drilling, but also for grouting the anchor tendon

Flexibility in length by using couplers

Ability to work with small drill rigs without casing in restricted headroom conditions

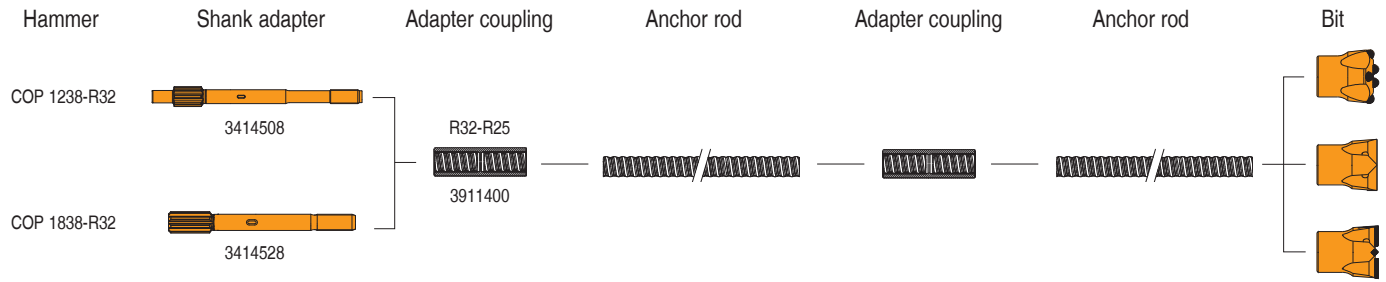
Accommodation of needs for enhanced protection against corrosion upon request

The accepted high standard of quality control from production stage to installation of the GSI Anchors ensures consistent quality

The GSI Anchor has an advantage in all applications where normally cased drilling is required.

The GSI Anchor System allows for anchoring in both cohesive and noncohesive ground, even under limited space conditions.

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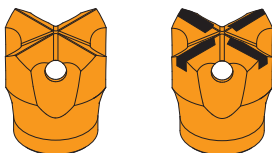
Rod R25	Outside diameter	Average internal diameter	Aver. eff. cross sectional area	Ultimate load capacity	Yield load capacity	Average tensile strength R_m	Average yield strength $R_{p0.2}$	Weight
	mm	mm	mm ²	kN	kN	N/mm ²	N/mm ²	kg/m
R25	25	14.0	314	200	150	690	520	2.1
The way of order								
	For 1 m long		For 2 m long	For 3 m long	For 4 m long	For 6 m long		
R25	2806010		2806020	2806030	2806040	2806060		

Coupling R25	Diameter	Length	Catalogue no.	Weight
	mm	mm		kg
	36.5	150	3911113	0.67
Nut R25	Key size	Length	Catalogue no.	Weight
	mm	mm		kg
	41	41	9201491	0.28
Spherical nut R25	41	41	9201601	0.33

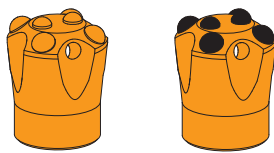
Anchor plate R25	Dimension	Hole diameter	Catalogue no.	Weight
	mm	mm		kg
	150x150x8	27.0	9201481	1.36
	200x200x10	27.0	9201482	2.99

Bits with thread R25

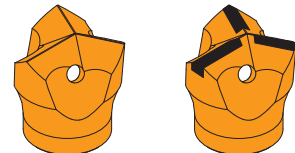
Description	Catalogue no.	Weight
		kg
Cross bit f42 without sintered carbide insert	5942010	0.21
Cross bit f42 with sintered carbide insert	5942022	0.27
Cross bit f51 without sintered carbide insert	5951020	0.33
Cross bit f51 with sintered carbide insert	5951032	0.41
Button bit f42 without sintered carbide insert	5942030	0.23
Button bit f42 with sintered carbide insert	5942032	0.29
Button bit f51 without sintered carbide insert	5951040	0.38
Button bit f51 with sintered carbide insert	5951052	0.41
Asymmetrical bit f51 without sintered carbide insert	59510801	0.37
Asymmetrical bit f51 with sintered carbide insert	59510821	0.40



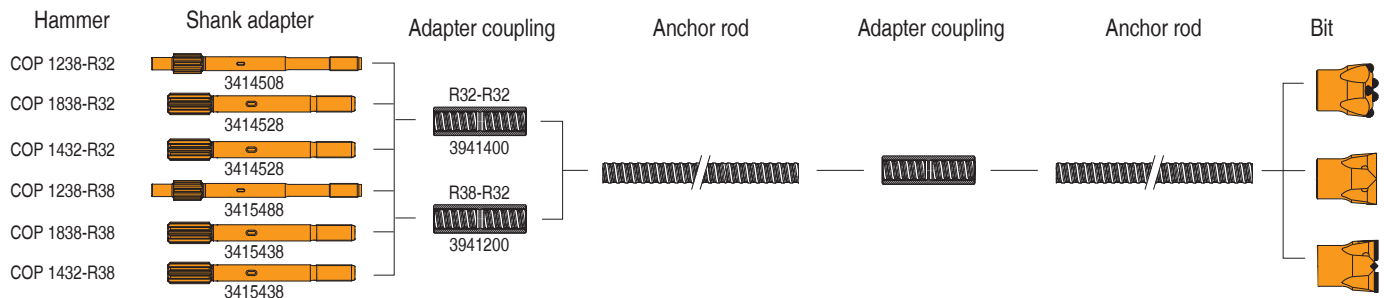
Cross bit



Button bit



Asymmetrical bit



Rod R32	Outside diameter	Average internal diameter	Aver. eff. cross sectional area	Ultimate load capacity	Yield load capacity	Average tensile strength R_m	Average yield strength $R_{p0.2}$	Weight
	mm	mm	mm ²	kN	kN	N/mm ²	N/mm ²	kg/m
R32/f22 L	32	22	341	220	180	650	530	2.9
R32/f18.5 N	32	18.5	471	280	230	650	530	3.5
R32/f15 S	32	15	547	360	280	690	540	4.2

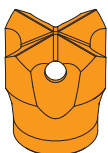
The way of order					
	For 1 m long	For 2 m long	For 3 m long	For 4 m long	For 6 m long
R32/f22 L	2807310	2807320	2807330	2807340	2807360
R32/f18.5 N	2806110	2806120	2806130	2806140	2806160
R32/f15 S	2806210	2806220	2806230	2806240	2806260

Coupling R32	Diameter	Length	Catalogue no.	Weight
	mm	mm		kg
	42.5	160	3941413	0.85
Nut R32	Key size	Length	Catalogue no.	Weight
	mm	mm		kg
	46	45	9201492	0.35
Spherical nut R32	46	46	9201602	0.50

Anchor plate R32	Dimension	Hole diameter	Catalogue no.	Weight
	mm	mm		kg
	150x150x8	34.5	9201483	1.37
	200x200x10	34.5	9201484	2.97

Bits with thread R32

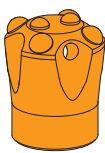
Description	Catalogue no.	Weight
		kg
Cross bit f45 without sintered carbide insert	5945010	0.28
Cross bit f45 with sintered carbide insert	5945012	0.29
Cross bit f51 without sintered carbide insert	59510201	0.31
Cross bit f51 with sintered carbide insert	59510321	0.39
Cross bit f64 without sintered carbide insert	5964010	0.60
Cross bit f64 with sintered carbide insert	5964012	0.64
Cross bit f76 without sintered carbide insert	5976010	0.80
Cross bit f76 with sintered carbide insert	5976022	0.84
Button bit f51 without sintered carbide insert	59510401	0.36
Button bit f51 with sintered carbide insert	59510521	0.39
Button bit f76 without sintered carbide insert	59760601	0.70
Button bit f76 with sintered carbide insert	59760651	0.75
Asymmetrical bit f51 without sintered carbide insert	5951080	0.35
Asymmetrical bit f51 with sintered carbide insert	5951082	0.38
Asymmetrical bit f76 without sintered carbide insert	5976070	0.73
Asymmetrical bit f76 with sintered carbide insert	5976072	0.80
Clay bit f76 / Clay bit f95	5976120 / 5995030	0.80 / 1.25
Clay bit f150	59150306	1.50



Cross bit



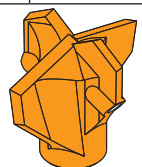
Button bit

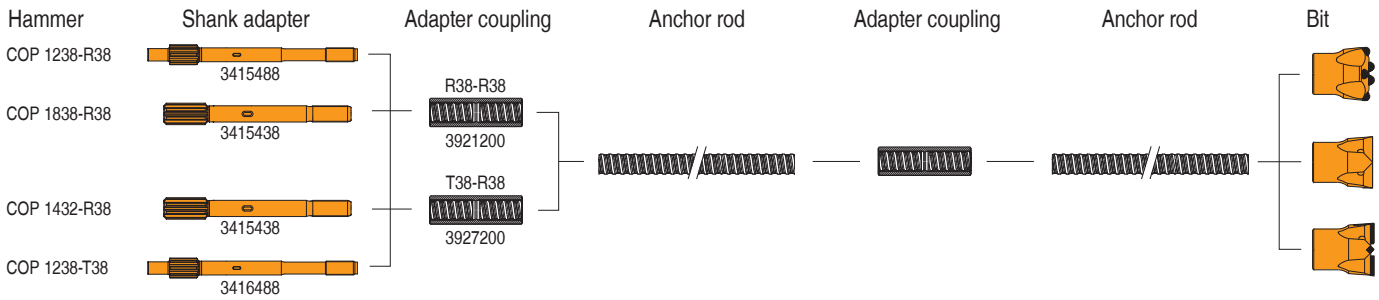


Asymmetrical bit



Clay bit
It is not offered in Germany market





Rod R38	Outside diameter	Average internal diameter	Aver. eff. cross sectional area	Ultimate load capacity	Yield load capacity	Average tensile strength R_m	Average yield strength $R_{p0.2}$	Weight
	mm	mm	mm ²	kN	kN	N/mm ²	N/mm ²	kg/m
R38	38	19	768	500	400	650	520	6.0

The way of order

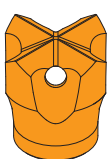
R38	For 1 m long	For 2 m long	For 3 m long	For 4 m long	For 6 m long
	2806310	2806320	2806330	2806340	2806360

Coupling R38	Diameter	Length	Catalogue no.	Weight
	mm	mm		kg
	51,0	180	3921213	1.76
Nut R38	Key size	Length	Catalogue no.	Weight
	mm	mm		kg
	50	49	9201493	0.40
Spherical nut R38	55	65	9201603	0.90

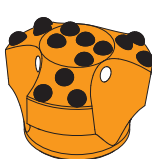
Anchor plate R38	Dimension	Hole diameter	Catalogue no.	Weight
	mm	mm		kg
	200x200x12	40.0	9201485	3.60

Bits with thread R38

Description	Catalogue no.	Weight
		kg
Cross bit $\varnothing 64$ without sintered carbide insert	59640101	0.60
Cross bit $\varnothing 64$ with sintered carbide insert	59640121	0.65
Cross bit $\varnothing 76$ without sintered carbide insert	59760101	0.85
Cross bit $\varnothing 76$ with sintered carbide insert	59760221	0.9
Cross bit $\varnothing 90$ without sintered carbide insert	59900301	1.34
Cross bit $\varnothing 90$ with sintered carbide insert	59900321	1.40
Button bit $\varnothing 76$ without sintered carbide insert	5976060	0.68
Button bit $\varnothing 76$ with sintered carbide insert	5976065	0.73
Button bit $\varnothing 90$ without sintered carbide insert	59900401	1.42
Button bit $\varnothing 90$ with sintered carbide insert	59900451	1.48
Button bit $\varnothing 115$ without sintered carbide insert	5915010	1.80
Button bit $\varnothing 115$ with sintered carbide insert	5915015	1.94
Asymmetrical bit $\varnothing 76$ without sintered carbide insert	59760701	0.71
Asymmetrical bit $\varnothing 76$ with sintered carbide insert	59760721	0.78
Asymmetrical-button bit $\varnothing 76$ without sintered carbide insert	5976090	0.88
Asymmetrical-button bit $\varnothing 76$ with sintered carbide insert	5976095	1.00
Asymmetrical-button bit $\varnothing 90$ without sintered carbide insert	59900801	1.10
Asymmetrical-button bit $\varnothing 90$ with sintered carbide insert	59900851	1.20
Clay bit $\varnothing 94$ / Clay bit $\varnothing 115$	5994030 / 59115302	1.35 / 1.40
Clay bit $\varnothing 130$ / Clay bit $\varnothing 150$	59130304 / 59150301	1.40 / 1.70



Cross bit



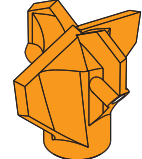
Button bit



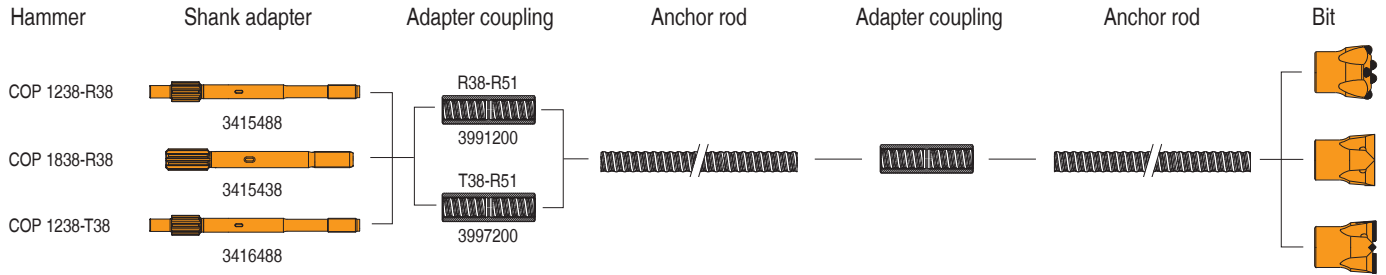
Asymmetrical bit



Asymmetrical-button bit



Clay bit
It is not offered in Germany market



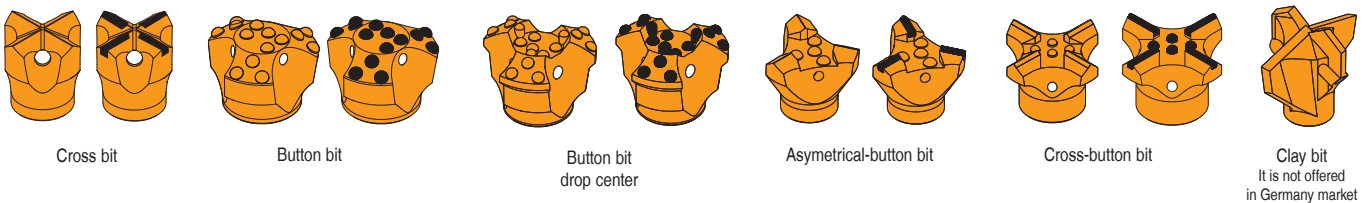
Rod R51	Outside diameter	Average internal diameter	Aver. eff. cross sectional area	Ultimate load capacity	Yield load capacity	Average tensile strength R_m	Average yield strength $R_{p0.2}$	Weight
	mm	mm	mm ²	kN	kN	N/mm ²	N/mm ²	kg/m
R51/f33 N	51	33	1217	800	630	750	590	9.5
The way of order								
	For 1 m long	For 2 m long	For 3 m long	For 4 m long	For 6 m long			
R51/f33 N	2806510	2806520	2806530	2806540	2806560			

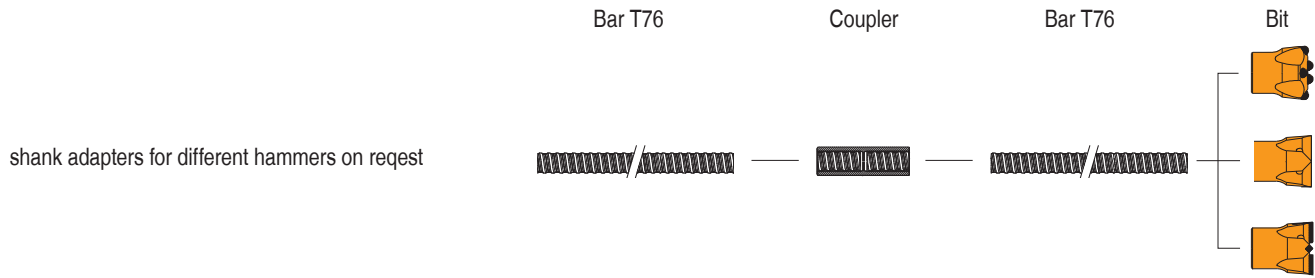
Coupling R51	Diameter	Length	Catalogue no.	Weight
	mm	mm		kg
	63	200	3991913	1.90
Nut R51	Key size	Length	Catalogue no.	Weight
	mm	mm		kg
	75	70	9201494	1.55
Spherical nut R51	75	70	9201604	1.73

Anchor plate R51	Dimension	Hole diameter	Catalogue no.	Weight
	mm	mm		kg
	200x200x12	52.5	9201486	3.6

Bits with thread R51

Description	Catalogue no.	Weight
		kg
Cross bit f76 without sintered carbide insert	59760104	0.77
Cross bit f76 with sintered carbide insert	59760124	0.80
Cross bit f90 without sintered carbide insert	59900302	1.46
Cross bit f90 with sintered carbide insert	59900322	1.50
Button bit f76 without sintered carbide insert	59760604	0.66
Button bit f76 with sintered carbide insert	59760654	0.71
Button bit f90 without sintered carbide insert	59900402	1.35
Button bit f90 with sintered carbide insert	59900452	1.42
Button bit f100 without sintered carbide insert	59000060	1.50
Button bit f100 with sintered carbide insert	59000065	1.64
Button bit drop center f115 without sintered carbide insert	59150101	1.86
Button bit drop center f115 with sintered carbide insert	59150151	2.00
Asymmetrical-Button bit f90 without sintered carbide insert	59900802	1.27
Asymmetrical-Button bit f90 with sintered carbide insert	59900852	1.38
Cross-Button bit f115 without sintered carbide insert	5911500	1.88
Cross-Button bit f115 with sintered carbide insert	5911505	1.95
Clay bit f130	59130303	1.92
Clay bit f150	59150302	2.20





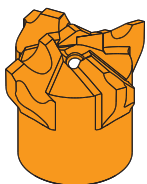
Rod T76	Outside diameter	Average internal diameter	Aver. eff. cross sectional area	Ultimate load capacity	Yield load capacity	Average tensile strength Rm	Average yield strength Rp0,2	Weight
	mm	mm	mm ²	kN	kN	N/mm ²	N/mm ²	kg/m
T76N	76	51	2468	1600	1200	840	630	19.5
T76S	76	45	2800	1900	1500	760	600	22.6

The way of order					
	For 1 m long	For 2 m long	For 3 m long	For 4 m long	For 6 m long
T76N	2806910	2806920	2806930	2806940	2806960
T76S	2807110	2807120	2807130	2807140	2807160

Coupling T76	Diameter	Length	Catalogue no.	Weight
	mm	mm		kg
	95	220	3999916	4.50
Nut T76	Key size	Length	Catalogue no.	Weight
	mm	mm		kg
	100	80	9201498	2.70
Anchor plate T76	Dimension	Hole diameter	Part no.	Weight
	mm	mm		kg
	250x250x40	80	9201682	18
	250x250x60	80	9201681	27

Bits with thread T76		
Description	Catalogue no.	Weight
		kg
Cross bit ř130 without sintered carbide inserts	5913060	3.05
Cross bit ř130 with sintered carbide inserts	5913064	3.20
Cross bit ř200 without sintered carbide inserts	5920040	6.90
Cross bit ř200 with sintered carbide inserts	5920044	7.10
Asymmetrical-button bit ř130 without sintered carbide insert	59130040	3.30
Asymmetrical-button bit ř130 with sintered carbide insert	59130042	3.45
Button bit drop center ř130 with sintered carbide insert	5913085	4.05
Clay bit ř130	5913030	3.50
Clay bit ř150	59150305	4.20
Clay bit ř200	5920030	5.45
Clay bit ř300	5930030	10.00

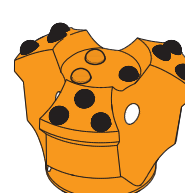
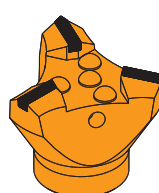
Further drill bits on request



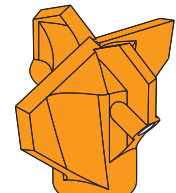
Cross bit



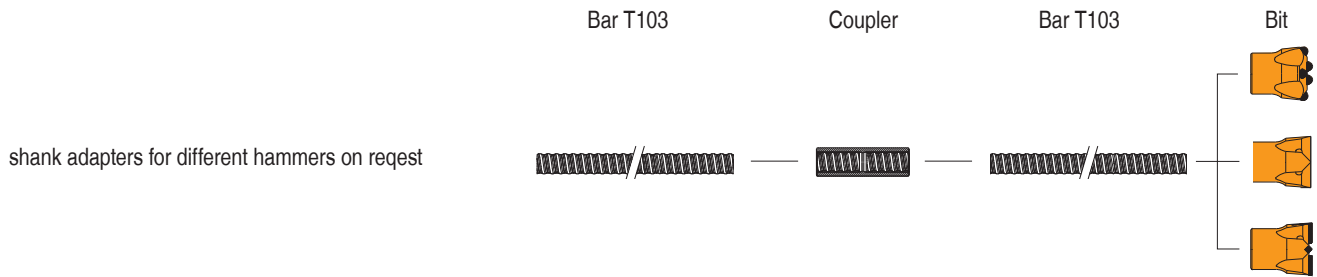
Asymmetrical-button bit



Button bit drop center



Clay bit
It is not offered in Germany market



Rod T103	Outside diameter	Average internal diameter	Aver. eff. cross sectional area	Ultimate load capacity	Yield load capacity	Average tensile strength R _m	Average yield strength R _{p0,2}	Weight
	mm	mm	mm ²	kN	kN	N/mm ²	N/mm ²	kg/m
T103N	103	75	3450	2380	1900	690	560	27.3
T103S	103	53	5200	3550	2720	680	520	42

The way of order

	For 1 m long	For 2 m long	For 3 m long	For 4 m long
T103N	2809510	2809520	2809530	2809540
T103S	2809810	2809820	2809830	2809840

	Diameter	Length	Catalogue no.	Weight
	mm	mm		kg
Coupling T103N	123	255	3999918	9.17
Coupling T103S	132	290	39999181	15

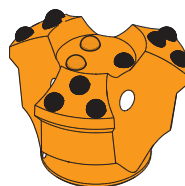
Nut T103	Key size	Length	Catalogue no.	Weight
	mm	mm		kg
	135	95	9201499	6

Anchor plate T103	Dimension	Hole diameter	Part no.	Weight
	mm	mm		kg
	300x300x50	110	9201702	20
	300x300x60	110	9201704	37.5

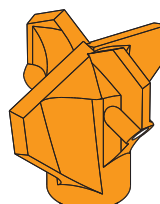
Bits with thread T103

Description	Catalogue no.	Weight
		kg
Button bit drop center $\varnothing$ 280 with sintered carbide insert	59280450	11
Clay bit $\varnothing$ 225	5922530	9
Clay bit $\varnothing$ 280	59280301	10.5

Further drill bits on request



Button bit
drop center



Clay bit
It is not offered
in Germany market

Adapter for bits	Type	G1	G2	Catalogue no.
	R25 → R32	R25	R32	3941106
	R25 → R38	R25	R38	3921106
	R32 → R25	R32	R25	3911406
	R32 → R38	R32	R38	3921406
	R32 → R51	R32	R51	3951406
	R38 → R25	R38	R25	3911206
	R38 → R32	R38	R32	39412061
	R38 → R51	R38	R51	3951206
	R38 → T76	R38	T76	3997206
	R51 → R32	R51	R32	3941506
	R51 → R38	R51	R38	3921506
	R51 → T76	R51	T76	3997506
	T76 → R51	T76	R51	3957906

Adapter for injection	Type	G1	Catalogue no.
	R25	R25	9202100
	R32	R32	9202110
	R38	R38	9202120
	R51	R51	9202130
	T76	T76	9202140

Connector for injection head	Type	D	G1	G2	Catalogue no.
	GB 70	70	R25	R32	9201776
	GB 70	70	R25	T38	9201774
	GB 70	70	R32	R32	9201775
	GB 70	70	R32	R38	9201773
	GB 70	70	R32	T38	9201770
	GB 70	70	R38	R38	9201772
	GB 70	70	R38	T38	9201771
	GB 70	70	T38	T38	9201777
	GB 80	80	R32	T45	9201931
	GB 80	80	R38	T45	9201932
	GB 85	85	R32	T45	9201921
	GB 85	85	R38	T45	9201922
	GB 85	85	R51	T45	9201923

Leading head	Type	D	Catalogue no.
	GB 65	65	9201870
	GB 70	70	9201760
	GB 80	80	9201880
	GB 85	85	9201860
	GB 100	100	9201900
	GB 110	110	9201910

Adapter for drilling	Type	D	G1	Catalogue no.
	6kt22	35	R25	3918700
	6kt22	45	R25	3918712
	6kt22	55	R38	3928700
	6kt22	42	Ti30	3949700
	6kt22	53	Ti40	3939700
	6kt22	65	Ti52	3959700
	6kt22	45	R32	3948700

Centralizer	G1	D	Catalogue no.
	R25	48	92016952
		73	92016953
	R32	48	92016911
		73	9201691
	R38	73	92016931
		87	92016932
		110	92016934
		130	92016935
	R51	87	92016942
		110	92016943
		125	92016944
	Ti73	125	92016961
		145	92016962
		195	92016963
	T76	125	9201690
		145	92016901
		195	92016902
	Ti103	145	92016971
		195	92016972

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