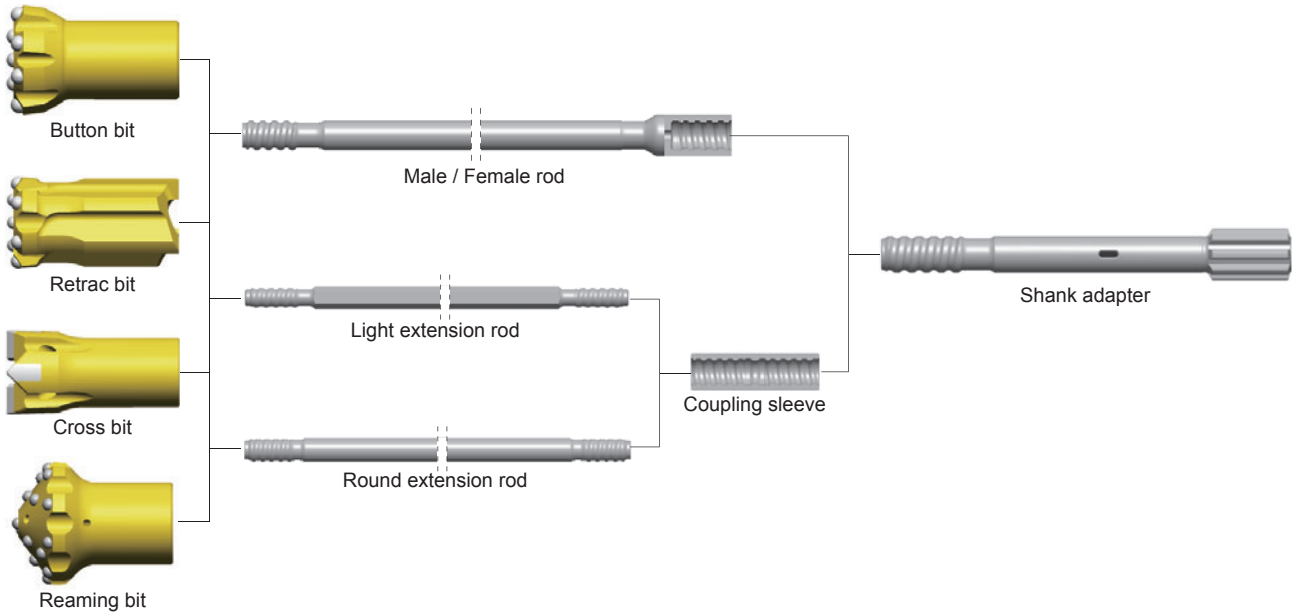


BENCH & LONGHOLE DRILLING EQUIPMENT



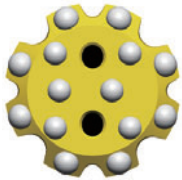
BENCH & LONG HOLE DRILLING EQUIPMENT

T38 (1 1/2") SERIES (Recommended gauge diameter Ø64 - Ø102)



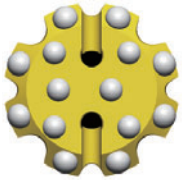
Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



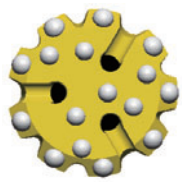
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	8×11	4×10	-	2	1.6	38MPVS64R15M
64	2 1/2"	40	8×10	5×10	-	2	1.6	38MPVS64R15H
70	2 3/4"	35	8×11	4×11	-	2	1.9	38MPVS70R15M
70	2 3/4"	40	8×11	5×10	-	2	1.9	38MPVS70R15H
76	3"	35	8×12	4×11	-	2	2.2	38MPVS76R15M
76	3"	40	8×11	5×11	-	2	2.2	38MPVS76R15H
89	3 1/2"	35	8×13	6×12	-	2	3.4	38MPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	3.4	38MPVS89R15H
102	4"	35	8×14	6×13	-	2	4.5	38MPVS102R15M
102	4"	40	8×13	6×13	-	2	4.5	38MPVS102R15H

Button bit Type 25



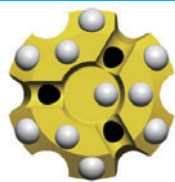
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	3.3	38MPVS89R25M
102	4"	35	8×14	6×13	-	2	4.4	38MPVS102R25M

Button bit Type 23



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	3.4	38MPVS89R23M
102	4"	35	9×13	6×13	-	3	4.5	38MPVS102R23M

Button bit Type 53 & 55



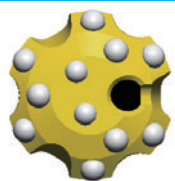
Type 53 (Ø64-Ø89)



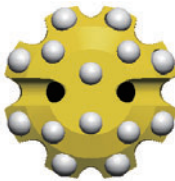
Type 55 (Ø76-Ø102)

Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	6×10	4×10	-	3	1.6	38MPVS64R53M
70	2 3/4"	35	6×11	4×11	-	3	1.8	38MPVS70R53M
76	3"	35	6×12	4×11	-	3	2.1	38MPVS76R53M
76	3"	35	8×11	5×11	-	4	2.2	38MPVS76R55M
89	3 1/2"	35	6×13	5×12	-	3	3.3	38MPVS89R53M
89	3 1/2"	35	8×12	6×12	-	4	3.4	38MPVS89R55M
102	4"	35	8×14	6×14	-	4	4.4	38MPVS102R55M

Button bit Type 83 & 85



Type 83 (Ø64-Ø76)



Type 85 (Ø76-Ø102)

Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	20-40	6×10	3×10, 2×9	1	1	1.6	38MPWS64BB83H
70	2 3/4"	20-40	6×11	5×10	1	1	1.8	38MPWS70BB83H
76	3"	20-40	6×11	3×11, 2×10	1	1	2.1	38MPWS76BB83H
76	3"	20-40	8×11	6×10	2	2	2.2	38MPWS76BB85H
89	3 1/2"	20-40	8×12	6×12	2	2	3.4	38MPWS89BB85H
102	4"	20-40	8×12	7×12	-	2	4.4	38MPVS102BB85H

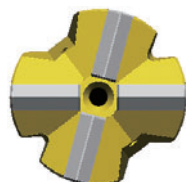
* Face angle 20°, Gauge angle 40°

Button bit Type 14



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	7×11	4×10	-	3	1.6	38MPVS64R14M
70	2 3/4"	35	7×11	4×11	-	3	1.8	38MPVS70R14M
76	3"	35	7×12	4×11	-	3	2.2	38MPVS76R14M
89	3 1/2"	35	7×14	5×12	-	3	3.4	38MPVS89R14M
102	4"	35	7×14	5×13	-	3	4.4	38MPVS102R14M

Cross bit

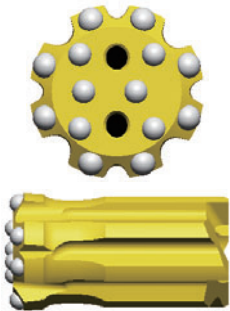


Gauge diameter		Carbide size W × H [mm]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	13×22	-	-	4	1	1.8	38MX64S
76	3"	13×22	-	-	4	1	2.4	38MX76S2

BENCH & LONG HOLE DRILLING EQUIPMENT

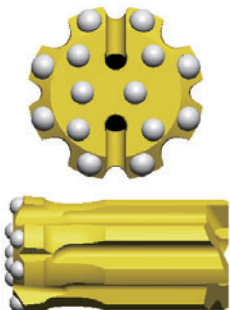
T38 (1 1/2") SERIES (Recommended gauge diameter Ø64 - Ø102)

Retrac Button bit Type 15



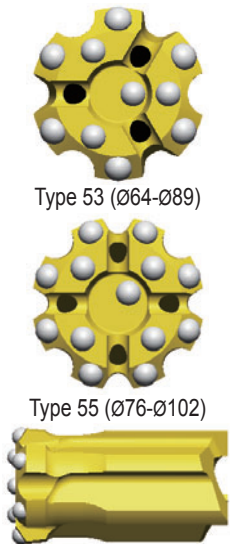
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	8×11	4×10	-	2	2.1	38MPVR64R15M
70	2 3/4"	35	8×11	4×11	-	2	2.6	38MPVR70R15M
76	3"	35	8×12	4×11	-	2	3.1	38MPVR76R15M
89	3 1/2"	35	8×13	6×12	-	2	4.4	38MPVR89R15M
102	4"	35	8×14	6×13	-	2	6.6	38MPVR102R15M

Retrac Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.4	38MPVR89R25M
102	4"	35	8×14	6×13	-	2	6.5	38MPVR102R25M

Retrac Button bit Type 53 & 55

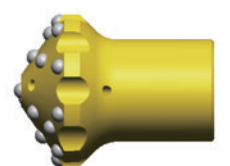


Type 53 (Ø64-Ø89)

Type 55 (Ø76-Ø102)

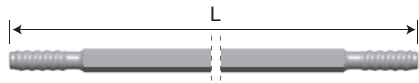
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
64	2 1/2"	35	6×10	4×10	-	3	2.0	38MPVR64R53M
70	2 3/4"	35	6×11	4×11	-	3	2.5	38MPVR70R53M
76	3"	35	6×12	4×11	-	3	2.9	38MPVR76R53M
76	3"	35	8×11	5×11	-	4	3.0	38MPVR76R55M
89	3 1/2"	35	6×13	5×12	-	3	4.3	38MPVR89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.4	38MPVR89R55M
102	4"	35	8×14	6×14	-	4	6.5	38MPVR102R55M

Reaming bit integration model



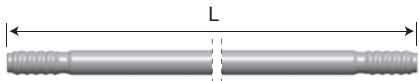
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
127	5"	35	9×13	10×13	3	1	7.5	WI38MPJ127R-D
152	6"	35	9×14	11×14	3	1	10.5	WI38MPJ152R-D

Light extension rod



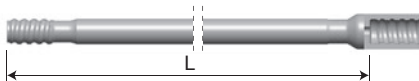
Thread	Hex		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	32	1 1/4"	3050	10'	18.4	EH32M38-3050
			3660	12'	22.1	EH32M38-3660

Round extension rod



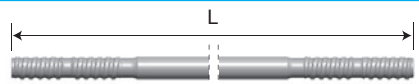
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	38	1 1/2"	3050	10'	24.7	ER38M38-3050
			3660	12'	29.4	ER38M38-3660
			4270	14'	34.7	ER38M38-4270
			4880	16'	39.7	ER38M38-4880
			5490	18'	44.6	ER38M38-5490

Male / Female rod



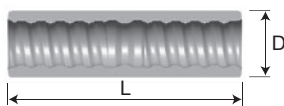
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	38	1 1/2"	900	3'	8.0	ER38M38MF-900
			1220	4'	9.7	ER38M38MF-1220
			1525	5'	13.3	ER38M38MF-1525
			1830	6'	16.0	ER38M38MF-1830
			2440	8'	21.3	ER38M38MF-2440
			3050	10'	25.9	ER38M38MF-3050
			3660	12'	30.7	ER38M38MF-3660

Tandem rod



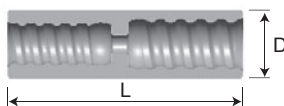
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T38 - T38	38	1 1/2"	3050	10'	24.4	ER38M38T-3050
			3660	12'	29.3	ER38M38T-3660

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T38 - T38	54	2 1/8"	190	7 1/2"	2.0	CM38

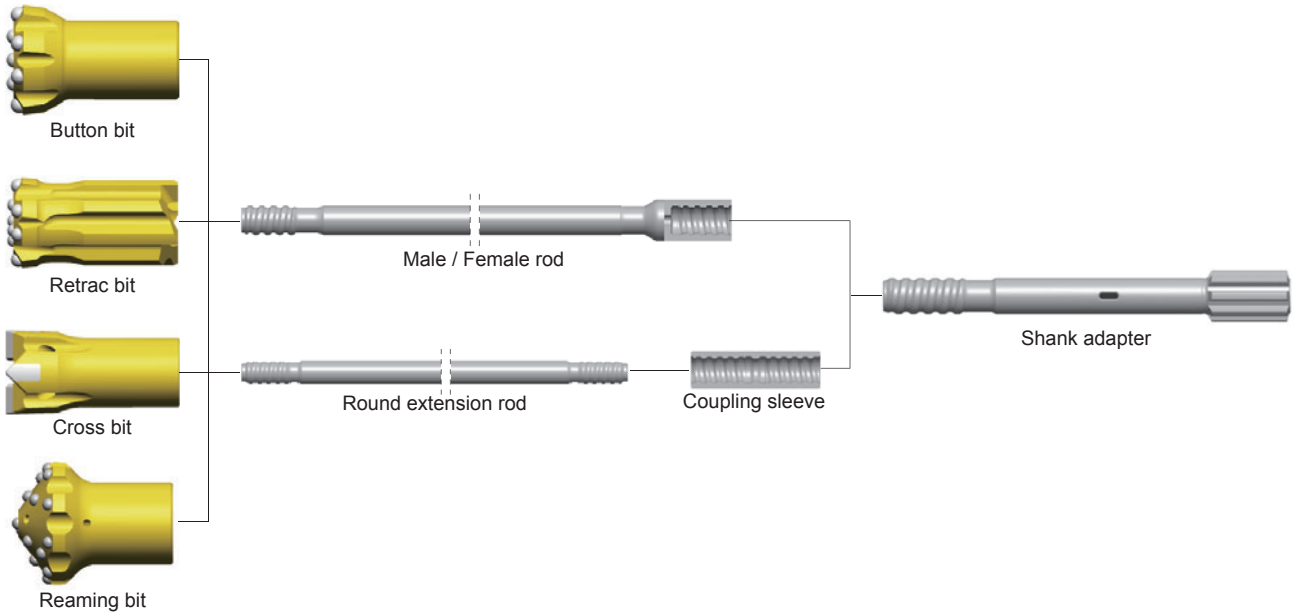
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T38 - R32	54	2 1/8"	188	7 1/2"	2.2	CM38R32
T38 - T45	63	2 1/2"	215	8 1/2"	3.4	CM45M38

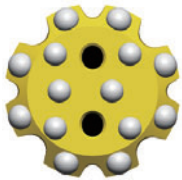
BENCH & LONG HOLE DRILLING EQUIPMENT

T45 (1 3/4") SERIES (Recommended gauge diameter Ø70 - Ø115)



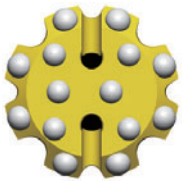
Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



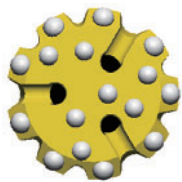
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	35	8×11	4×11	-	2	1.9	45MPVS70R15M
70	2 3/4"	40	8×11	5×10	-	2	1.9	45MPVS70R15H
76	3"	35	8×12	4×11	-	2	2.3	45MPVS76R15M
76	3"	40	8×11	5×11	-	2	2.3	45MPVS76R15H
89	3 1/2"	35	8×13	6×12	-	2	3.8	45MPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	3.8	45MPVS89R15H
102	4"	35	8×14	6×13	-	2	4.4	45MPVS102R15M
102	4"	40	8×13	6×13	-	2	4.4	45MPVS102R15H

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	3.7	45MPVS89R25M
102	4"	35	8×14	6×13	-	2	4.3	45MPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	6.3	45MPVS115R25M

Button bit Type 23

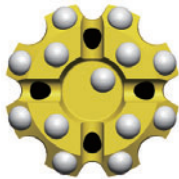


Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	3.8	45MPVS89R23M
102	4"	35	9×13	6×13	-	3	4.4	45MPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	6.4	45MPVS115R23MS

Button bit Type 53 & 55



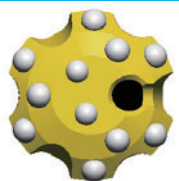
Type 53 (Ø70-Ø89)



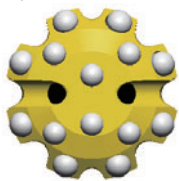
Type 55 (Ø76-Ø115)

Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	35	6×11	4×11	-	3	1.8	45MPVS70R53M
76	3"	35	6×12	4×11	-	3	2.2	45MPVS76R53M
76	3"	35	8×11	5×11	-	4	2.3	45MPVS76R55M
89	3 1/2"	35	6×13	5×12	-	3	3.6	45MPVS89R53M
89	3 1/2"	35	8×12	6×12	-	4	3.7	45MPVS89R55M
102	4"	35	8×14	6×14	-	4	4.3	45MPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	6.3	45MPVS115R55M

Button bit Type 83 & 85



Type 83 (Ø70-Ø76)

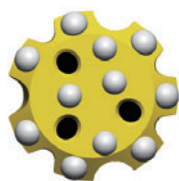


Type 85 (Ø76-Ø115)

Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	20-40	6×11	5×10	1	1	1.8	45MPWS70BB83H
76	3"	20-40	6×11	3×11, 2×10	1	1	2.2	45MPWS76BB83H
76	3"	20-40	8×11	6×10	2	2	2.3	45MPWS76BB85H
89	3 1/2"	20-40	8×12	6×12	2	2	3.6	45MPWS89BB85H
102	4"	20-40	8×12	7×12	-	2	4.3	45MPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	6.3	45MPVS115BB85H

* Face angle 20°, Gauge angle 40°

Button bit Type 14



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
70	2 3/4"	35	7×11	4×11	-	3	1.8	45MPVS70R14M
76	3"	35	7×12	4×11	-	3	2.3	45MPVS76R14M
89	3 1/2"	35	7×14	5×12	-	3	3.6	45MPVS89R14M
102	4"	35	7×14	5×13	-	3	4.3	45MPVS102R14M

Cross bit

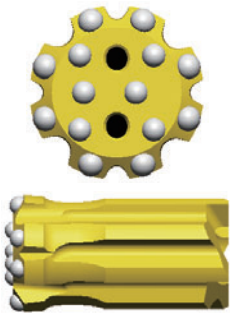


Gauge diameter		Carbide size W × H [mm]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
76	3"	13×22	-	-	4	1	2.5	45MX76S2
89	3 1/2"	13×22	-	-	4	1	4.0	45MX89S

BENCH & LONG HOLE DRILLING EQUIPMENT

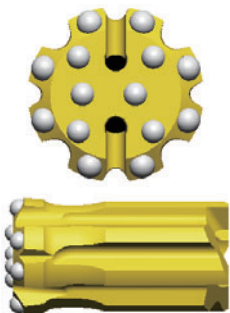
T45 (1 3/4") SERIES (Recommended gauge diameter Ø76 - Ø115)

Retrac Button bit Type 15



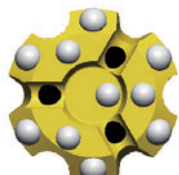
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
76	3"	35	8×12	4×11	-	2	3.0	45MPVR76R15M
89	3 1/2"	35	8×13	6×12	-	2	4.5	45MPVR89R15M
102	4"	35	8×14	6×13	-	2	6.6	45MPVR102R15M

Retrac Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.4	45MPVR89R25M
102	4"	35	8×14	6×13	-	2	6.5	45MPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	8.4	45MPVR115R25M

Retrac Button bit Type 53 & 55



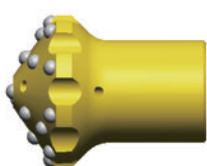
Type 53 (Ø76-Ø89)



Type 55 (Ø76-Ø102)

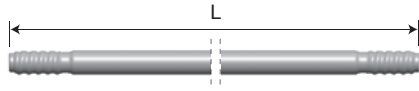
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
76	3"	35	6×12	4×11	-	3	2.9	45MPVR76R53M
76	3"	35	8×11	5×11	-	4	3.0	45MPVR76R55M
89	3 1/2"	35	6×13	5×12	-	3	4.2	45MPVR89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.5	45MPVR89R55M
102	4"	35	8×14	6×14	-	4	6.5	45MPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	8.4	45MPVR115R55M

Reaming bit integration model



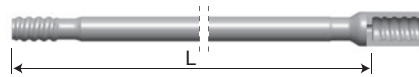
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
127	5"	35	9×13	10×13	3	1	7.5	WI45MPJ127R-D
152	6"	35	9×14	11×14	3	1	10.5	WI45MPJ152R-D

Round extension rod



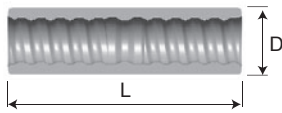
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T45 - T45	45	1 3/4"	3050	10'	34.1	ER45M45-3050
			3660	12'	41.0	ER45M45-3660
			4270	14'	48.1	ER45M45-4270
			4880	16'	54.9	ER45M45-4880
			6100	20'	68.9	ER45M45-6100

Male / Female rod



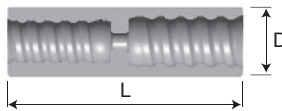
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T45 - T45	45	1 3/4"	1525	5'	18.4	ER45M45MF-1525
			1830	6'	22.1	ER45M45MF-1830
			3050	10'	36.1	ER45M45MF-3050
			3660	12'	43.3	ER45M45MF-3660
			4270	14'	50.2	ER45M45MF-4270

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T45 - T45	63	2 1/2"	210	8 1/4"	3.0	CM45
T45 - T45	66	2 5/8"	210	8 1/4"	3.5	CM45-2

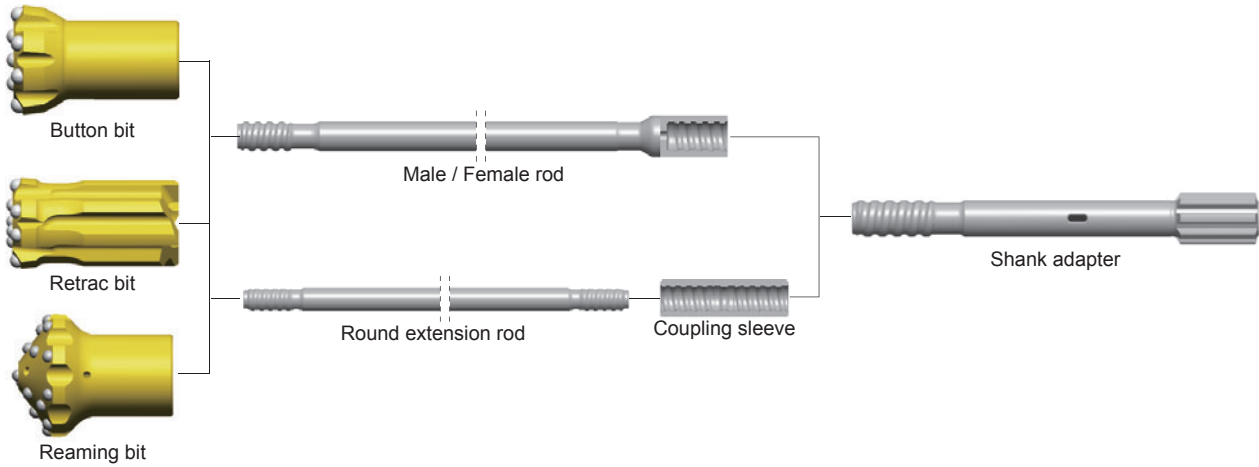
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T45 - T38	63	2 1/2"	215	8 1/2"	3.4	CM45M38
T45 - T51	72	2 7/8"	240	9 1/2"	5.0	CM51M45

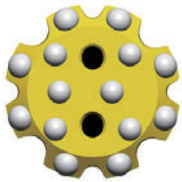
BENCH & LONG HOLE DRILLING EQUIPMENT

T51 (2") SERIES (Recommended gauge diameter Ø89 - Ø127)



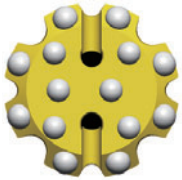
Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



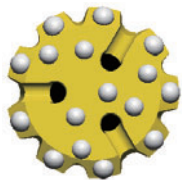
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.1	51MPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	4.1	51MPVS89R15H
102	4"	35	8×14	6×13	-	2	5.2	51MPVS102R15M
102	4"	40	8×13	6×13	-	2	5.2	51MPVS102R15H

Button bit Type 25



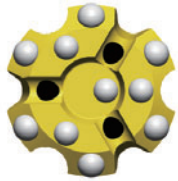
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.0	51MPVS89R25M
102	4"	35	8×14	6×13	-	2	5.1	51MPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	6.6	51MPVS115R25M
127	5"	35	8×16	8×14	-	2	8.7	51MPVS127R25M

Button bit Type 23

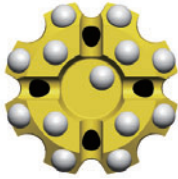


Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	4.1	51MPVS89R23M
102	4"	35	9×13	6×13	-	3	5.2	51MPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	6.7	51MPVS115R23MS
115	4 1/2"	35	9×14	7×14	-	3	6.8	51MPVS115R23M
127	5"	35	9×14	7×14	-	3	8.8	51MPVS127R23MS
127	5"	35	9×16	7×16	-	3	8.9	51MPVS127R23M

Button bit Type 53 & 55



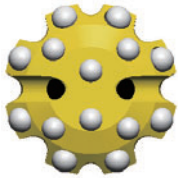
Type 53 (Ø89)



Type 55 (Ø89-Ø127)

Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	6×13	5×12	-	3	3.9	51MPVS89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.0	51MPVS89R55M
102	4"	35	8×14	6×14	-	4	5.1	51MPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	6.6	51MPVS115R55M
127	5"	35	8×16	4×16,4×14	-	4	8.7	51MPVS127R55M

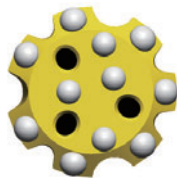
Button bit Type 85



Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	20-40	8×12	6×12	2	2	3.9	51MPWS89BB85H
102	4"	20-40	8×12	7×12	-	2	5.0	51MPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	6.5	51MPVS115BB85H
127	5"	20-40	8×14	4×14, 4×12	-	2	8.6	51MPVS127BB85H

* Face angle 20°, Gauge angle 40°

Button bit Type 14

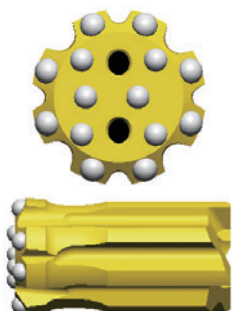


Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	7×14	5×12	-	3	4.0	51MPVS89R14M
102	4"	35	7×14	5×13	-	3	5.1	51MPVS102R14M

BENCH & LONG HOLE DRILLING EQUIPMENT

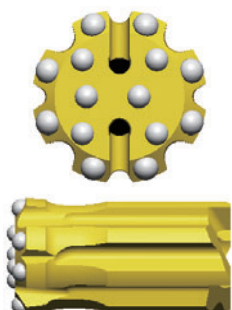
T51 (2") SERIES (Recommended gauge diameter Ø89 - Ø127)

Retrac Button bit Type 15



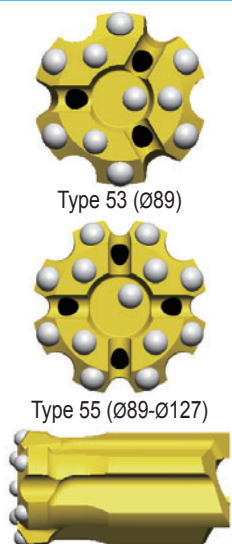
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.4	51MPVR89R15M
102	4"	35	8×14	6×13	-	2	6.5	51MPVR102R15M

Retrac Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.3	51MPVR89R25M
102	4"	35	8×14	6×13	-	2	6.4	51MPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	8.3	51MPVR115R25M
127	5"	35	8×16	8×14	-	2	10.7	51MPVR127R25M

Retrac Button bit Type 53 & 55

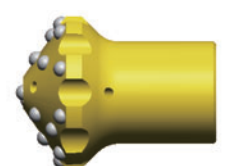


Type 53 (Ø89)

Type 55 (Ø89-Ø127)

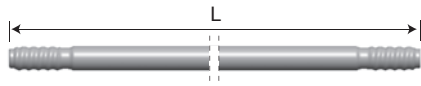
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	6×13	5×12	-	3	4.2	51MPVR89R53M
89	3 1/2"	35	8×12	6×12	-	4	4.3	51MPVR89R55M
102	4"	35	8×14	6×14	-	4	6.4	51MPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	8.3	51MPVR115R55M
127	5"	35	8×16	4×16, 4×14	-	4	10.7	51MPVR127R55M

Reaming bit integration model



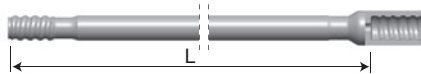
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
152	6"	35	9×14	11×14	3	1	10.6	WI51MPJ152R-D

Round extension rod



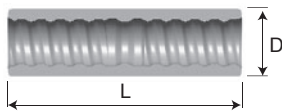
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T51 - T51	51	2"	3660	12'	49.6	ER51M51-3660
			4270	14'	58.1	ER51M51-4270
			6100	20'	82.9	ER51M51-6100

Male / Female rod



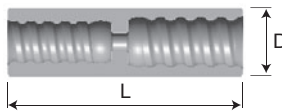
Thread	Outside diameter		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
T51 - T51	51	2"	1525	5'	22.0	ER51M51MF-1525
			1830	6'	26.4	ER51M51MF-1830
			3660	12'	52.8	ER51M51MF-3660
			4270	14'	61.6	ER51M51MF-4270

Coupling sleeve



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T51 - T51	72	2 7/8"	235	9 1/4"	4.4	CM51
T51 - T51	77	3"	235	9 1/4"	5.5	CM51-2

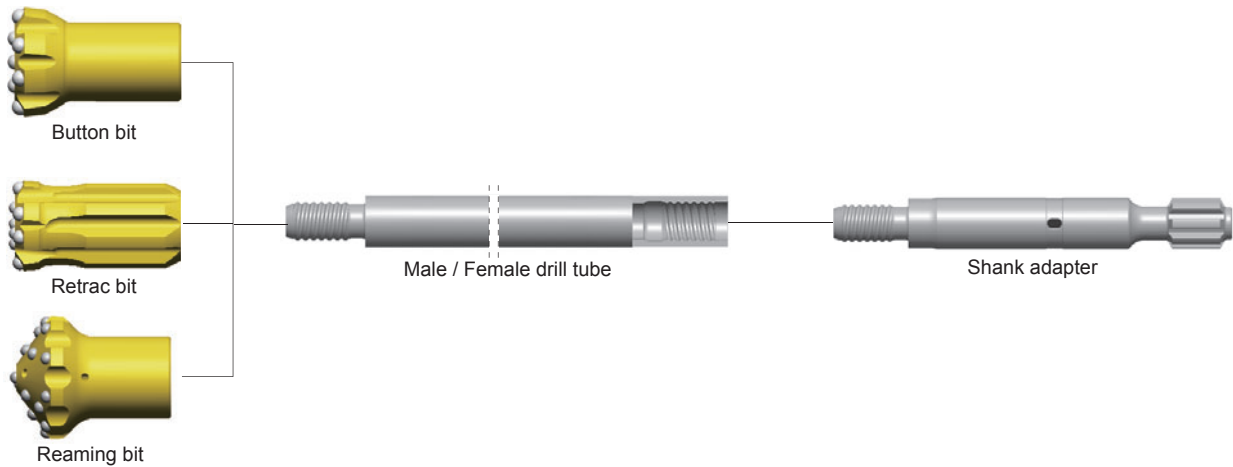
Crossover coupling



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[in]		
T51 - T45	72	2 7/8"	240	9 1/2"	5.0	CM51M45

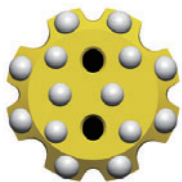
TUBE DRILLING EQUIPMENT

ST58 (2 1/4") SERIES (Recommended gauge diameter Ø89 - Ø127)



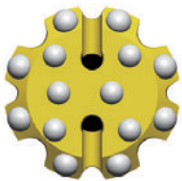
Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 15



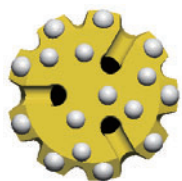
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	4.0	58WDPVS89R15M
89	3 1/2"	40	8×12	6×12	-	2	4.0	58WDPVS89R15H
102	4"	35	8×14	6×13	-	2	5.0	58WDPVS102R15M
102	4"	40	8×13	6×13	-	2	4.9	58WDPVS102R15H

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	3.9	58WDPVS89R25M
102	4"	35	8×14	6×13	-	2	4.9	58WDPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	6.9	58WDPVS115R25M
127	5"	35	8×16	8×14	-	2	8.9	58WDPVS127R25M

Button bit Type 23



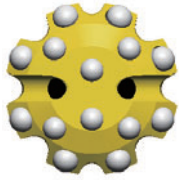
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	9×12	6×12	-	3	3.9	58WDPVS89R23M
102	4"	35	9×13	6×13	-	3	5.0	58WDPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	6.9	58WDPVS115R23MS
115	4 1/2"	35	9×14	7×14	-	3	7.0	58WDPVS115R23M
127	5"	35	9×14	7×14	-	3	8.9	58WDPVS127R23MS
127	5"	35	9×16	7×16	-	3	9.0	58WDPVS127R23M

Button bit Type 55



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×12	6×12	-	4	3.8	58WDPVS89R55M
102	4"	35	8×14	6×14	-	4	4.9	58WDPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	6.9	58WDPVS115R55M
127	5"	35	8×16	4×16,4×14	-	4	8.9	58WDPVS127R55M

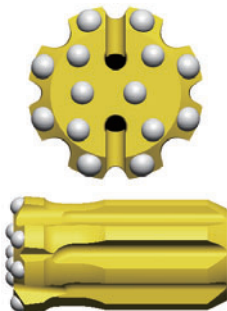
Button bit Type 85



Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	20-40	8×12	6×12	2	2	3.7	58WDPWS89BB85H
102	4"	20-40	8×13	7×12	-	2	4.8	58WDPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	6.8	58WDPVS115BB85H
127	5"	20-40	8×14	4×14, 4×12	-	2	8.8	58WDPVS127BB85H

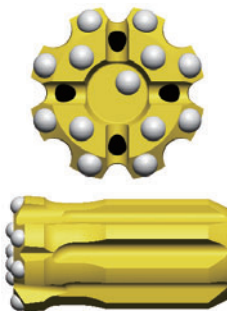
* Face angle 20°, Gauge angle 40°

Retrac Button bit Type 25



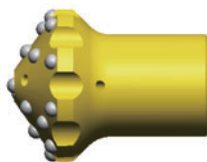
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×13	6×12	-	2	5.6	58WDPVR89R25M
102	4"	35	8×14	6×13	-	2	7.8	58WDPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	10.6	58WDPVR115R25M
127	5"	35	8×16	8×14	-	2	12.8	58WDPVR127R25M

Retrac Button bit Type 55



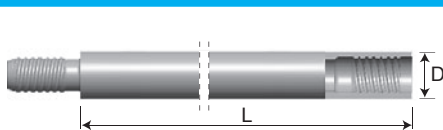
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
89	3 1/2"	35	8×12	6×12	-	4	5.4	58WDPVR89R55M
102	4"	35	8×14	6×14	-	4	7.6	58WDPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	10.4	58WDPVR115R55M
127	5"	35	8×16	4×16, 4×14	-	4	12.6	58WDPVR127R55M

Reaming bit integration model



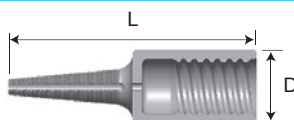
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
152	6"	35	9×14	11×14	3	1	11.0	WI58WDP152R-D

Male / Female drill tube



Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
ST58 - ST58	77	3"	1525	5'	34.0	GR77WD58MF-1525
			1830	6'	40.3	GR77WD58MF-1830

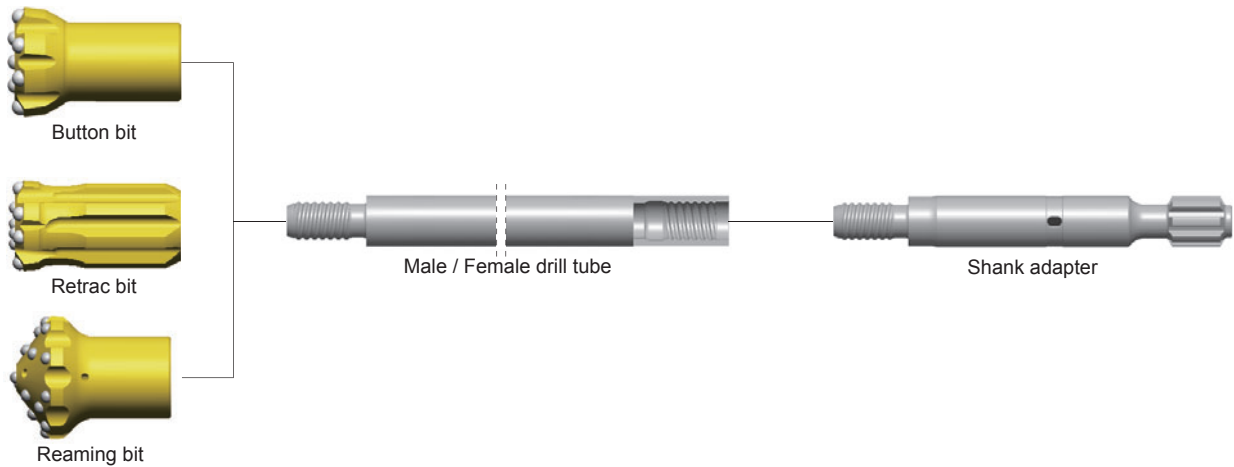
Recovery pike



Outside diameter(D)		Length(L)		Weight [Kg]	Part number
[mm]	[in]	[mm]	[in]		
78	3"	260	10 1/4"	3.4	FTM-58WD-GR78

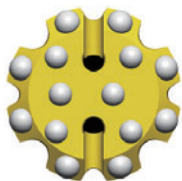
TUBE DRILLING EQUIPMENT

ST68 (2 3/4") SERIES (Recommended gauge diameter Ø102 - Ø127)



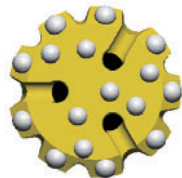
Standard item list - CUSTOM BUTTONS AND FLUSHING CONFIGURATIONS ARE AVAILABLE UPON REQUEST
For details of bit design, please refer to p.16

Button bit Type 25



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×13	-	2	5.8	68WDPVS102R25M
115	4 1/2"	35	8×14	7×13	-	2	7.8	68WDPVS115R25M
127	5"	35	8×16	8×14	-	2	10.2	68WDPVS127R25M

Button bit Type 23



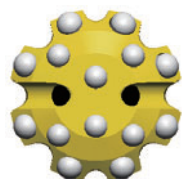
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	9×13	6×13	-	3	5.8	68WDPVS102R23M
115	4 1/2"	35	9×13	7×13	-	3	7.8	68WDPVS115R23MS
115	4 1/2"	35	9×14	7×14	-	3	7.9	68WDPVS115R23M
127	5"	35	9×14	7×14	-	3	10.2	68WDPVS127R23MS
127	5"	35	9×16	7×16	-	3	10.3	68WDPVS127R23M

Button bit Type 55



Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×14	-	4	5.7	68WDPVS102R55M
115	4 1/2"	35	8×14	8×14	-	4	7.7	68WDPVS115R55M
127	5"	35	8×16	4×16, 4×14	-	4	10.1	68WDPVS127R55M

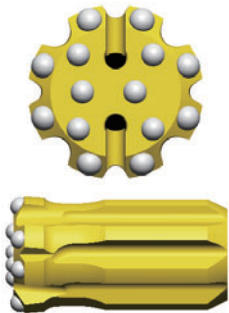
Button bit Type 85



Gauge diameter		* Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	20-40	8×12	7×12	-	2	5.6	68WDPVS102BB85H
115	4 1/2"	20-40	8×14	8×12	-	2	7.6	68WDPVS115BB85H
127	5"	20-40	8×14	4×14, 4×12	-	2	10.0	68WDPVS127BB85H

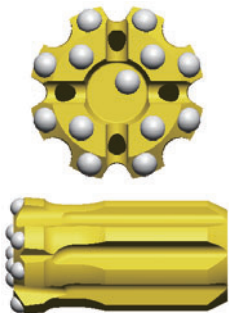
* Face angle 20°, Gauge angle 40°

Retrac Button bit Type 25



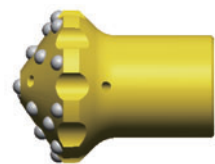
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×13	-	2	6.6	68WDPVR102R25M
115	4 1/2"	35	8×14	7×13	-	2	9.4	68WDPVR115R25M
127	5"	35	8×16	8×14	-	2	12.1	68WDPVR127R25M

Retrac Button bit Type 55



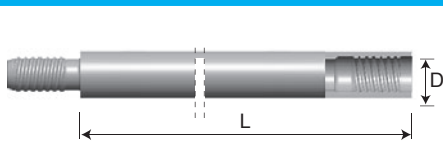
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
102	4"	35	8×14	6×14	-	4	6.4	68WDPVR102R55M
115	4 1/2"	35	8×14	8×14	-	4	9.2	68WDPVR115R55M
127	5"	35	8×16	4×16,4×14	-	4	11.8	68WDPVR127R55M

Reaming bit integration model



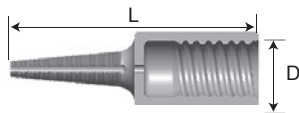
Gauge diameter		Gauge angle [°]	Button × Button dia.[mm]		Flushing hole		Weight [Kg]	Part number
[mm]	[in]		Gauge	Face	Side	Face		
152	6"	35	9×14	11×14	3	1	11.2	WI68WDP152R-D

Male / Female drill tube



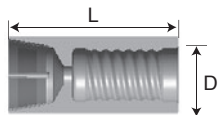
Thread	Outside diameter(D)		Length(L)		Weight [Kg]	Part number
	[mm]	[in]	[mm]	[ft/in]		
ST68 - ST68	87	3 1/2"	1525	5'	39.8	GR87WD68MF-1525
	87	3 1/2"	1830	6'	47.3	GR87WD68MF-1830

Recovery pike



Outside diameter(D)		Length(L)		Weight [Kg]	Part number
[mm]	[in]	[mm]	[in]		
88	3 1/2"	260	10 1/4"	6.2	FTM-68WD-GR88

Recovery sleeve



Outside diameter(D)		Length(L)		Weight [Kg]	Part number
[mm]	[in]	[mm]	[in]		
100	4"	225	8 7/8"	7.5	FTF-68WD-GR88