

NPA

New Product Announcement No. 2019-28



DRILL RUSH

RUSH 2 FLUTE

Premium Hole Machining with Unique
P+ Drill Head Geometry



KEY POINT

TaeguTec has introduced a new TCD P+ DRILL-RUSH line that allows for excellent precision and deep hole machining without the pilot hole .

TaeguTec's **DRILL-RUSH** line has launched a newly designed P+ drill head type that offers optimal solutions for improving productivity and reducing costs with exceptional performance and longer tool life.

In deep hole machining larger than 8xD, due to the creative edge design, drilling without the pilot hole can be done at once, thus improving productivity through process simplification, as well as achieving excellent hole precision and surface roughness.

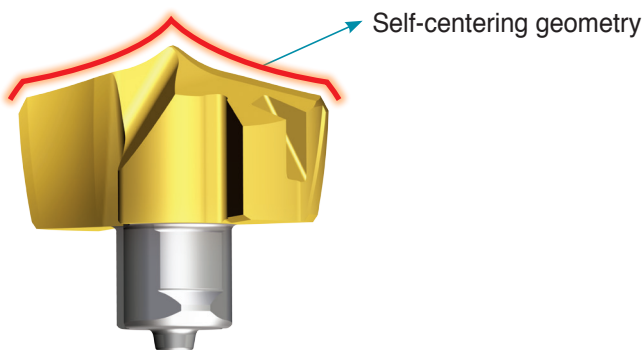
Improved cutting edge design and the latest multi-layer coating grade ensures better tool life. The new TCD P+ head type is compatible with the existing standard drill body, making it the ideal solution for customers requiring economic, better drilling.

* As part of the new campaign, the design for the new **DRILL-RUSH** line highlights TaeguTec's new direction.

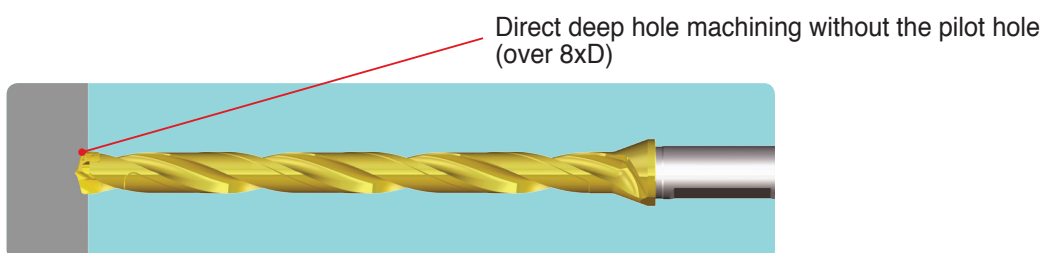
For further technical assistance, please contact TaeguTec's product manager.

Features

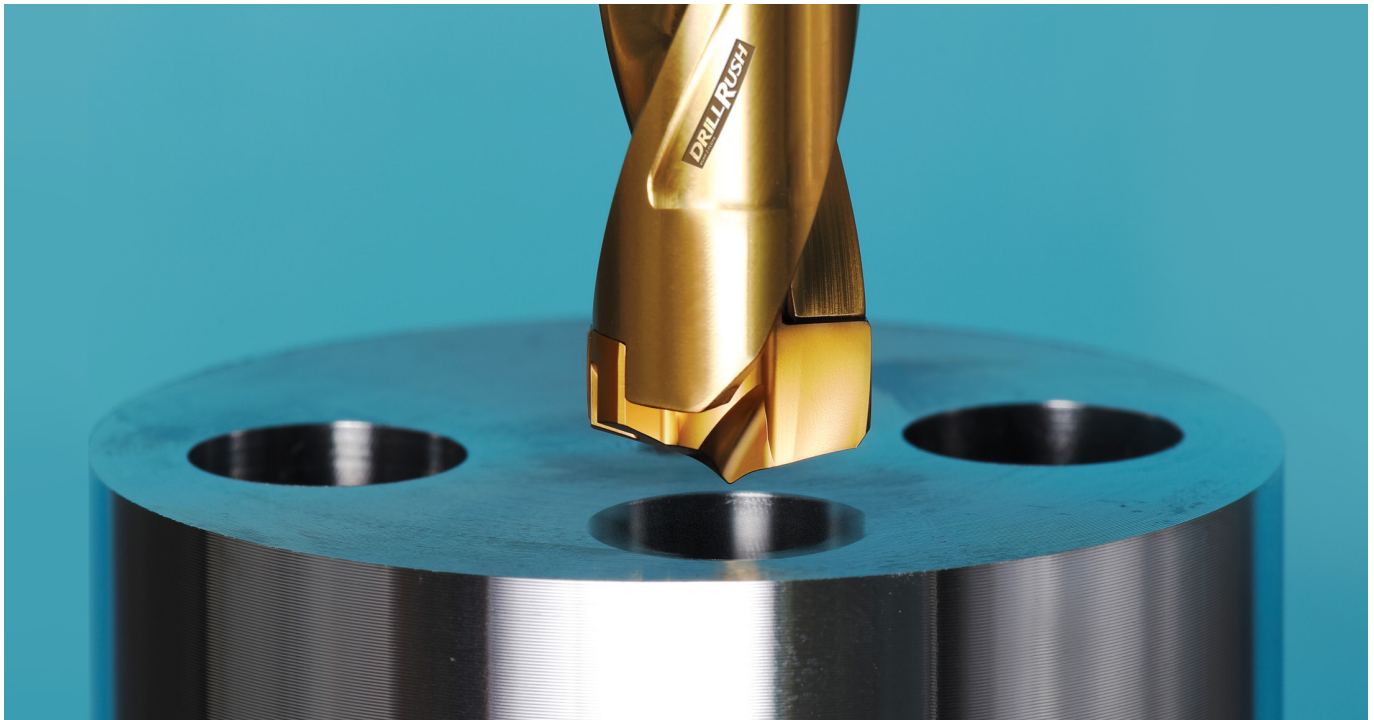
- Excellent hole precision due to its unique cutting edge
 - Self-centering capability
 - Premium surface roughness, hole cylindricity and straightness



- In deep hole machining larger than 8xD, drilling without the pilot hole is possible
 - Reduced processing time and increased productivity



- Rigid cutting edge design and the latest multi-layer coating grade
 - Excellent tool life
- Suitable for steel and cast iron machining
- Drill diameter range: 6.0 - 25.9 mm (0.5 mm units)



Availability

In stock

Price

Available in the GAL system

Sincerely,
TaeguTec

Sung Chang-ho



Hole-Making General PM

Reference

The unique cutting edge design of the TCD P+ enables better surface roughness, hole cylindricity and straightness. The table below for a 12xD holder has been measured and machined without the pilot hole. (Results may vary depending on the cutting conditions)

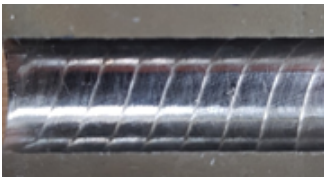
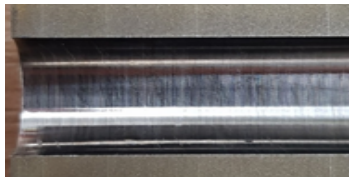
Material: Alloy steel (42CrMo4)			
Hole from tolerance		TCD P+	TCD P
Straightness	-	0.1 mm	0.2 mm
Circular form	○	0.02 mm	0.04 mm
Cylindrical form	∅	0.02 mm	0.04 mm

Hole surface roughness

	TaeguTec	TaeguTec
Material	Carbon steel (AISI 1045)	
Drill	TCD 135-139-16S0-12D	TCD 135-139-16S0-12D
Head	TCD-135-P TT9080	TCD-135-P+ TT9080
Drilling depth (mm)	65	65
Hole diameter (mm)	13.5	13.5
Coolant	Emulsion	Emulsion
Remark	Pilot hole with 1.5xD DRILL-RUSH body	No pilot hole
Surface roughness		

* The TCD P+ provides excellent surface roughness without the required pilot drill when compared to current product lines

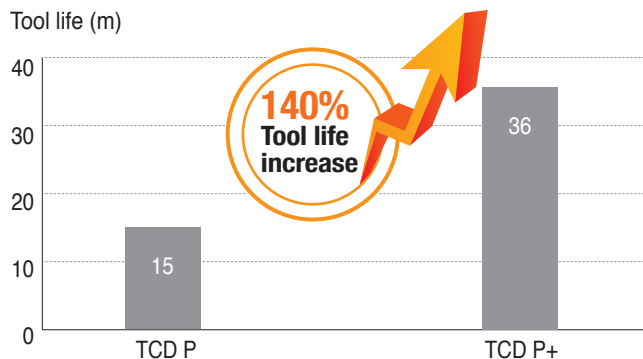
Case study 1

		TaeguTec	TaeguTec
Material		Carbon steel (AISI 1045)	
Drill		TCD 095-099-12T3-8D	TCD 095-099-12T3-8D
Head		TCD-097-P TT9080	TCD-097-P+ TT9080
Drilling depth (mm)		70	70
Cutting Speed	V (m/min)	70	70
Feed	f (mm/rev)	0.1	0.1
Coolant		Wet (15 bar)	Wet (15 bar)
Remark		Direct drilling on the lathe (no pilot hole)	
Surface roughness			

* The TCD P+ provides excellent surface roughness without the required pilot drill when compared to current product lines

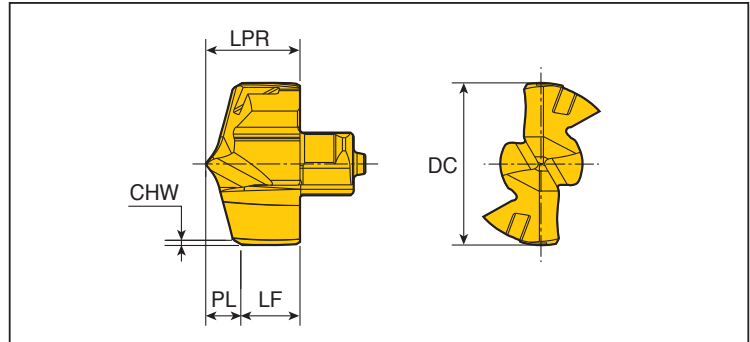
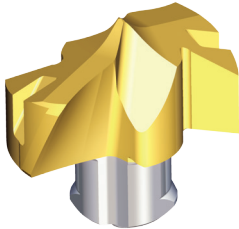
Case study 2

		TaeguTec	TaeguTec
Material		Alloy steel (AISI 4140, 42CrMo4)	
Drill		TCD 190-199-25S0-8D	TCD 190-199-25S0-8D
Head		TCD-190-P TT9080	TCD-190-P+ TT9080
Drilling depth (mm)		150 (Through hole)	150 (Through hole)
Cutting Speed	V (m/min)	100	100
Feed	f (mm/rev)	0.3	0.3
Coolant		Wet (15 bar)	Wet (15 bar)
Tool life (m)		15	36



TCD-P+

Self-centering drill heads



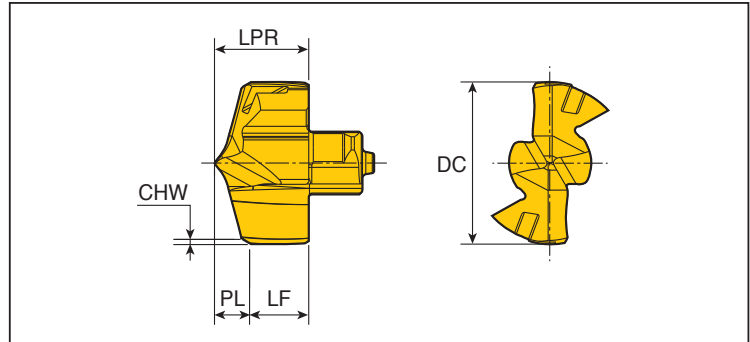
Designation	Dimension (mm)					SSC	Grade TT9080
	DC	LPR	PL	LF	CHW		
TCD-060-P+	6.0	4.00	1.46	2.54	0.27	6	●
065-P+	6.5	4.30	1.55	2.75	0.27	6.5	●
068-P+	6.8	4.30	1.55	2.75	0.27	6.5	●
070-P+	7.0	4.60	1.64	2.96	0.27	7	●
075-P+	7.5	4.60	1.64	2.96	0.27	7	●
080-P+	8.0	5.40	1.81	3.59	0.27	8	●
085-P+	8.5	5.40	1.81	3.59	0.27	8	●
086-P+	8.6	5.40	1.81	3.59	0.27	8	●
090-P+	9.0	5.80	1.98	3.82	0.27	9	●
095-P+	9.5	5.80	1.98	3.82	0.27	9	●
099-P+	9.9	5.80	1.98	3.82	0.27	9	●
100-P+	10.0	6.20	2.33	3.87	0.38	10	●
102-P+	10.2	6.20	2.33	3.87	0.38	10	●
103-P+	10.3	6.20	2.33	3.87	0.38	10	●
105-P+	10.5	6.20	2.33	3.87	0.38	10	●
107-P+	10.7	6.20	2.33	3.87	0.38	10	●
108-P+	10.8	6.20	2.33	3.87	0.38	10	●
110-P+	11.0	6.60	2.50	4.10	0.38	11	●
111-P+	11.1	6.60	2.50	4.10	0.38	11	●
115-P+	11.5	6.60	2.50	4.10	0.38	11	●
120-P+	12.0	7.00	2.67	4.33	0.38	12	●
123-P+	12.3	7.00	2.67	4.33	0.38	12	●
125-P+	12.5	7.00	2.67	4.33	0.38	12	●
126-P+	12.6	7.00	2.67	4.33	0.38	12	●
127-P+	12.7	7.00	2.67	4.33	0.38	12	●
130-P+	13.0	7.60	2.85	4.75	0.38	13	●
135-P+	13.5	7.60	2.85	4.75	0.38	13	●
140-P+	14.0	8.15	3.02	5.13	0.38	14	●
141-P+	14.1	8.15	3.02	5.13	0.38	14	●
142-P+	14.2	8.15	3.02	5.13	0.38	14	●
143-P+	14.3	8.15	3.02	5.13	0.38	14	●
145-P+	14.5	8.15	3.02	5.13	0.38	14	●
146-P+	14.6	8.15	3.02	5.13	0.38	14	●
150-P+	15.0	8.73	3.19	5.54	0.38	15	●

● SSC : Seat size code

● Standard items

TCD-P+

Self-centering drill heads



Designation	Dimension (mm)					SSC	Grade TT9080
	DC	LPR	PL	LF	CHW		
TCD-151-P+	15.1	8.73	3.19	5.54	0.38	15	●
152-P+	15.2	8.73	3.19	5.54	0.38	15	●
155-P+	15.5	8.73	3.19	5.54	0.38	15	●
159-P+	15.9	8.73	3.19	5.54	0.38	15	●
160-P+	16.0	9.30	3.46	5.84	0.44	16	●
161-P+	16.1	9.30	3.46	5.84	0.44	16	●
163-P+	16.3	9.30	3.46	5.84	0.44	16	●
164-P+	16.4	9.30	3.46	5.84	0.44	16	●
165-P+	16.5	9.30	3.46	5.84	0.44	16	●
167-P+	16.7	9.30	3.46	5.84	0.44	16	●
170-P+	17.0	9.90	3.63	6.27	0.44	17	●
173-P+	17.3	9.90	3.63	6.27	0.44	17	●
175-P+	17.5	9.90	3.63	6.27	0.44	17	●
180-P+	18.0	10.50	3.81	6.69	0.44	18	●
185-P+	18.5	10.50	3.81	6.69	0.44	18	●
190-P+	19.0	11.00	3.98	7.02	0.44	19	●
192-P+	19.2	11.00	3.98	7.02	0.44	19	●
193-P+	19.3	11.00	3.98	7.02	0.44	19	●
194-P+	19.4	11.00	3.98	7.02	0.44	19	●
195-P+	19.5	11.00	3.98	7.02	0.44	19	●
200-P+	20.0	11.60	4.15	7.45	0.44	20	●
205-P+	20.5	11.60	4.15	7.45	0.44	20	●
206-P+	20.6	11.60	4.15	7.45	0.44	20	●
210-P+	21.0	12.18	4.32	7.86	0.44	21	●
215-P+	21.5	12.18	4.32	7.86	0.44	21	●
220-P+	22.0	12.76	4.50	8.26	0.44	22	●
222-P+	22.2	12.76	4.50	8.26	0.44	22	●
225-P+	22.5	12.76	4.50	8.26	0.44	22	●
230-P+	23.0	13.33	4.67	8.66	0.44	23	●
235-P+	23.5	13.33	4.67	8.66	0.44	23	●
240-P+	24.0	13.90	4.84	9.06	0.44	24	●
245-P+	24.5	13.90	4.84	9.06	0.44	24	●
250-P+	25.0	14.50	5.01	9.49	0.44	25	●
255-P+	25.5	14.50	5.01	9.49	0.44	25	●
259-P+	25.9	14.50	5.01	9.49	0.44	25	●

● SSC : Seat size code

● Standard items

Recommended Cutting Conditions

ISO	Material	Condition	Tensile Strength (N/mm ²)	Hardness HB	Material Group No	Cutting Speed Vc (m/min)	Feed vs. Drill Diameter (mm/rev)			
							Ø6 - Ø7.9	Ø8 - Ø9.9	Ø10 - Ø11.9	Ø12 - Ø13.9
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1	80-140	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30
		≥0.25%C Annealed	650	190	2	80-130	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30
		<0.55%C Quenched and tempered	850	250	3	80-120	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30
		≥0.55%C Annealed	750	220	4	70-110	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30
		Quenched and tempered	1000	300	5	50-90	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	600	200	6	70-120	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32
		Quenched and tempered	930	275	7	70-110	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32
			1000	300	8	50-90	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32
			1200	350	9	40-70	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	50-90	0.09-0.12	0.12-0.20	0.12-0.22	0.15-0.25
Quenched and tempered		1100	325	11	40-80	0.09-0.12	0.12-0.20	0.12-0.22	0.15-0.25	
K	Gray cast iron (GG)	Ferritic		160	15	90-160	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40
		Pearlitic		250	16	80-140	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40
	Cast iron nodular (GGG)	Ferritic		180	17	90-180	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40
		Pearlitic		260	18	80-140	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40
	Malleable cast iron	Ferritic		130	19	90-160	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40
		Pearlitic		230	20	80-140	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40

ISO	Material	Condition	Tensile Strength (N/mm ²)	Hardness HB	Material Group No	Cutting Speed Vc (m/min)	Feed vs. Drill Diameter (mm/rev)			
							Ø14 - Ø15.9	Ø16 - Ø19.9	Ø20 - Ø25.9	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1	80-140	0.20-0.35	0.25-0.45	0.25-0.45	
		≥0.25%C Annealed	650	190	2	80-130	0.20-0.35	0.25-0.45	0.25-0.45	
		<0.55%C Quenched and tempered	850	250	3	80-120	0.20-0.35	0.25-0.45	0.25-0.45	
		≥0.55%C Annealed	750	220	4	70-110	0.20-0.35	0.25-0.45	0.25-0.45	
		Quenched and tempered	1000	300	5	50-90	0.20-0.35	0.25-0.45	0.25-0.45	
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	600	200	6	70-120	0.18-0.35	0.23-0.40	0.25-0.45	
		Quenched and tempered	930	275	7	70-110	0.18-0.35	0.23-0.40	0.25-0.45	
			1000	300	8	50-90	0.18-0.35	0.23-0.40	0.25-0.45	
			1200	350	9	40-70	0.18-0.35	0.23-0.40	0.25-0.45	
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	50-90	0.18-0.28	0.20-0.30	0.22-0.33	
Quenched and tempered		1100	325	11	40-80	0.18-0.28	0.20-0.30	0.22-0.33		
K	Gray cast iron (GG)	Ferritic		160	15	90-160	0.32-0.45	0.30-0.55	0.35-0.60	
		Pearlitic		250	16	80-140	0.32-0.45	0.30-0.55	0.35-0.60	
	Cast iron nodular (GGG)	Ferritic		180	17	90-180	0.32-0.45	0.30-0.55	0.35-0.60	
		Pearlitic		260	18	80-140	0.32-0.45	0.30-0.55	0.35-0.60	
	Malleable cast iron	Ferritic		130	19	90-160	0.32-0.45	0.30-0.55	0.35-0.60	
		Pearlitic		230	20	80-140	0.32-0.45	0.30-0.55	0.35-0.60	

■ Steel ■ Cast iron

KIT COLLECTIONS

These kit products are available in the format listed below.



Cat. No.	Designation	Bill of materials	Qty.
6334412	KISFT-TCD 100-P+5D TT9080	TCD 100-104-16T3-5D	1
		TCD-100-P+ TT9080	3
6334413	KISFT-TCD 110-P+5D TT9080	TCD 110-114-16T3-5D	1
		TCD-110-P+ TT9080	3
6334414	KISFT-TCD 120-P+5D TT9080	TCD 120-124-16T3-5D	1
		TCD-120-P+ TT9080	3
6334415	KISFT-TCD 130-P+5D TT9080	TCD 130-134-16T3-5D	1
		TCD-130-P+ TT9080	3
6334416	KISFT-TCD 140-P+5D TT9080	TCD 140-144-16T3-5D	1
		TCD-140-P+ TT9080	3
6334417	KISFT-TCD 150-P+5D TT9080	TCD 150-159-20T3-5D	1
		TCD-150-P+ TT9080	3
6334418	KISFT-TCD 160-P+5D TT9080	TCD 160-169-20T3-5D	1
		TCD-160-P+ TT9080	3
6334419	KISFT-TCD 170-P+5D TT9080	TCD 170-179-20T3-5D	1
		TCD-170-P+ TT9080	3
6334420	KISFT-TCD 180-P+5D TT9080	TCD 180-189-25T2-5D	1
		TCD-180-P+ TT9080	3
6334421	KISFT-TCD 190-P+5D TT9080	TCD 190-199-25T2-5D	1
		TCD-190-P+ TT9080	3

KIT COLLECTIONS

These kit products are available in the format listed below.



Cat. No.	Designation	Bill of materials	Qty.
6334429	KISFS-TCD 100-P+5D TT9080	TCD 100-104-16T3-5D	1
		TCD-100-P+ TT9080	10
6334430	KISFS-TCD 110-P+5D TT9080	TCD 110-114-16T3-5D	1
		TCD-110-P+ TT9080	10
6334431	KISFS-TCD 120-P+5D TT9080	TCD 120-124-16T3-5D	1
		TCD-120-P+ TT9080	10
6334433	KISFS-TCD 130-P+5D TT9080	TCD 130-134-16T3-5D	1
		TCD-130-P+ TT9080	10
6334434	KISFS-TCD 140-P+5D TT9080	TCD 140-144-16T3-5D	1
		TCD-140-P+ TT9080	10
6334435	KISFS-TCD 150-P+5D TT9080	TCD 150-159-20T3-5D	1
		TCD-150-P+ TT9080	10
6334436	KISFS-TCD 160-P+5D TT9080	TCD 160-169-20T3-5D	1
		TCD-160-P+ TT9080	10
6334437	KISFS-TCD 170-P+5D TT9080	TCD 170-179-20T3-5D	1
		TCD-170-P+ TT9080	10
6334438	KISFS-TCD 180-P+5D TT9080	TCD 180-189-25T2-5D	1
		TCD-180-P+ TT9080	10
6334439	KISFS-TCD 190-P+5D TT9080	TCD 190-199-25T2-5D	1
		TCD-190-P+ TT9080	10



Cat. No.	Designation	Bill of materials	Qty.
6334447	KISFF-TCD-100-P+ TT9080	TCD-100-P+ TT9080	30
6334448	KISFF-TCD-110-P+ TT9080	TCD-110-P+ TT9080	30
6334449	KISFF-TCD-120-P+ TT9080	TCD-120-P+ TT9080	30
6334450	KISFF-TCD-130-P+ TT9080	TCD-130-P+ TT9080	30
6334451	KISFF-TCD-140-P+ TT9080	TCD-140-P+ TT9080	30
6334452	KISFF-TCD-150-P+ TT9080	TCD-150-P+ TT9080	30
6334453	KISFF-TCD-160-P+ TT9080	TCD-160-P+ TT9080	30
6334454	KISFF-TCD-170-P+ TT9080	TCD-170-P+ TT9080	30
6334455	KISFF-TCD-180-P+ TT9080	TCD-180-P+ TT9080	30
6334456	KISFF-TCD-190-P+ TT9080	TCD-190-P+ TT9080	30