

YE-ST13



i - Dream Drill

for General Purpose / for Tough Steel & Stainless Steel



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for General Purpose
for Tough Steel & Stainless Steel



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Tool specifications are subject to change without notice.

YG1ST110512004

YG-1 CO., LTD.

Features of *i-Dream Drill*

i-Dream Drill Insert :

- By using advanced drill point technology, centering and reaming are eliminated, and accurate, consistent hole size is easily attainable.
- The newest coatings combined with tough long lasting carbide substrates, allow high penetration rates and long tool life.
- The strong and accurate insert locking system allows easy access and quick insert replacement while the drill is mounted in the machine.

■ *i-Dream Drill* General

- For most steel materials

■ *i-Dream Drill* INOX

- For tough, ductile materials and stainless steel
- Light, sharp cutting edge
- Soft cutting action
- Minimize cutting forces
- Reduce built-up edge

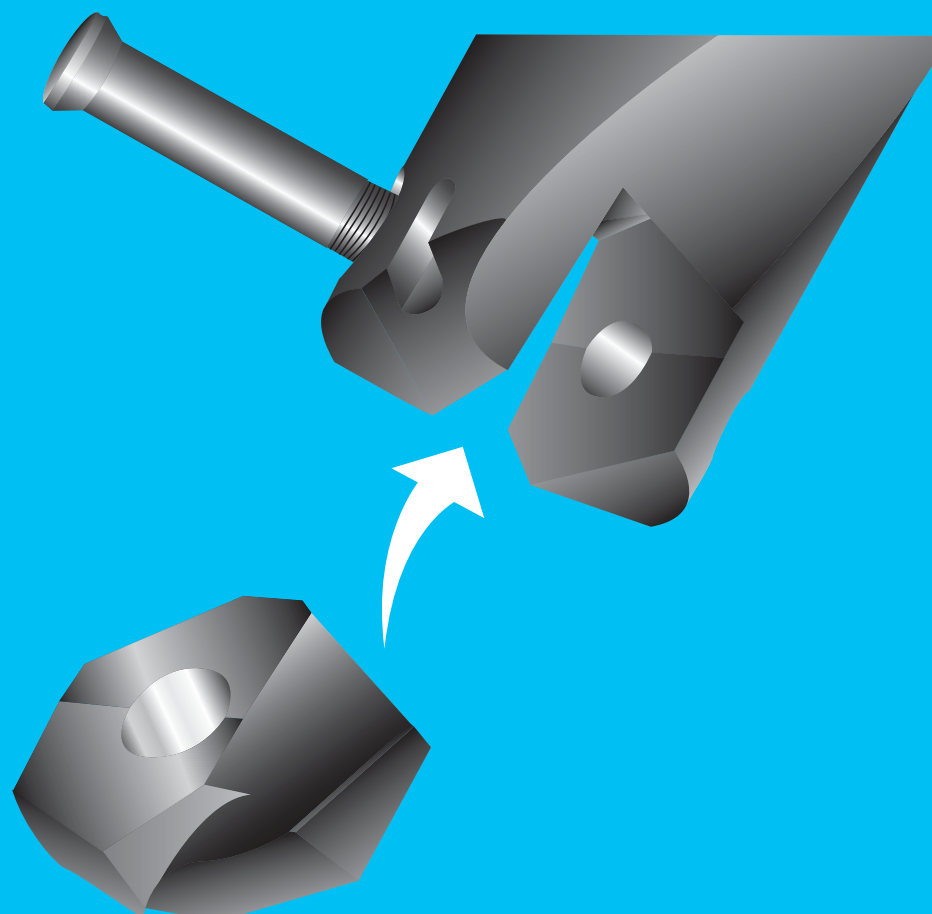
i-Dream Drill Holder :

- The holder, made of a highly wear resistant Steel alloy, is designed to allow maximum coolant flow and unrestricted chip removal during the drilling cycle.

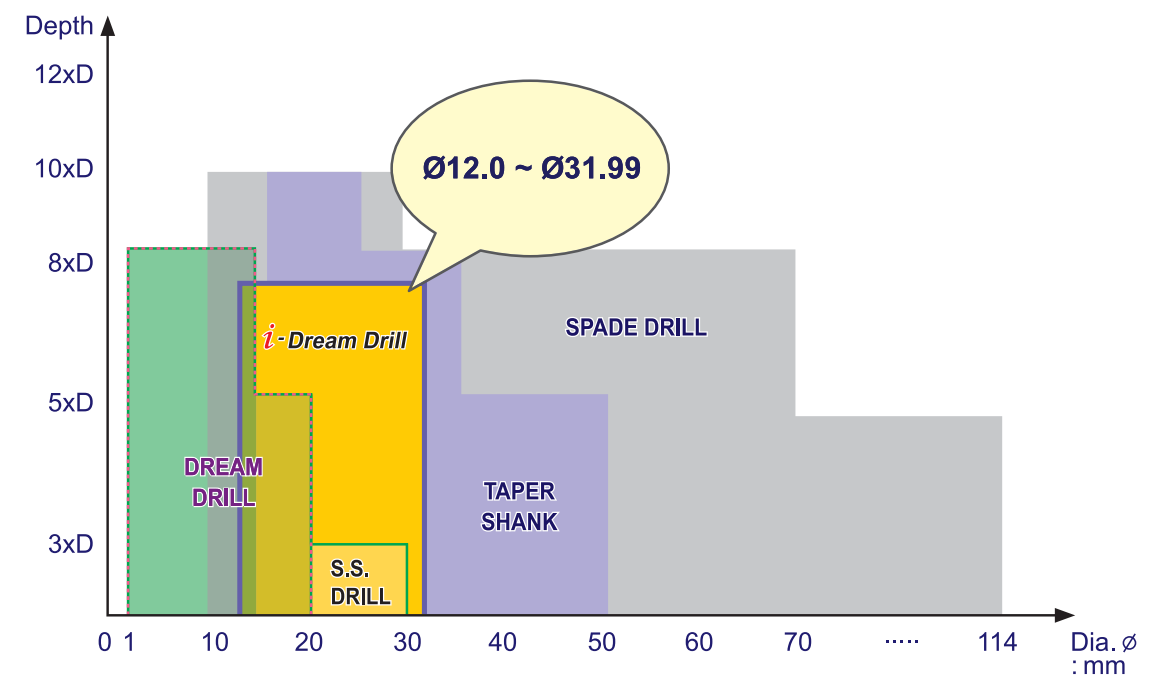
Speed and Feed :

- The speeds and feeds recommended as shown are for ideal working conditions with adequate coolant pressure.
- It recommended to consider on new jobs 10 ~ 20% lower speeds and feeds as a starting point.

HIGH PERFORMANCE & OPTIMAL COST



i-Dream Drill Portion in YG-1 Drill Products



Features of *i-Dream Drill*

Comparison with Split Point Drill, Spade Drill, Dream Drill



Normal Split Point Drill



Dream Drill



Spade Drill



i-Dream Drill

TOOL

| | |
|--------|------------------|
| HOLDER | ZH14505020 |
| INSERT | YB1A1450 / Ø14.5 |

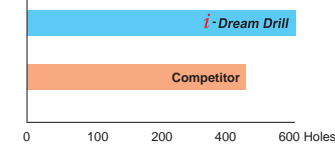
WORKPIECE - Structural Steel

| | |
|------|--------|
| ASTM | A36 |
| DIN | St37-2 |
| JIS | SS400 |

CONDITIONS

| | |
|---------------|---------------------------|
| Cutting Speed | 80 m/min |
| Feed | 0.24 mm/rev. |
| Feedrate | 421 mm/min |
| RPM | 1756 rev./min |
| Drilling | 48.0 mm |
| Coolant | Internal |
| Machine type | Vertical Machining Center |

RESULT



YG-1 i-Dream Drill



COMPETITOR



TOOL

| | |
|--------|------------------|
| HOLDER | ZH14005020 |
| INSERT | YB1A1400 / Ø14.0 |

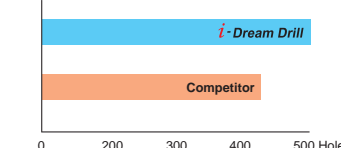
WORKPIECE - Alloy Steel(HB286)

| | |
|------|---------|
| AISI | 4140 |
| DIN | 45CrMo4 |
| JIS | SCM440 |

CONDITIONS

| | |
|---------------|---------------|
| Cutting Speed | 70 m/min |
| Feed | 0.15 mm/rev. |
| Feedrate | 239 mm/min |
| RPM | 1590 rev./min |
| Drilling | 70.0 mm |
| Coolant | Internal |
| Machine type | NC lathe |

RESULT



YG-1 i-Dream Drill



COMPETITOR



TOOL

| | |
|--------|------------------|
| HOLDER | ZH24003032 |
| INSERT | YG1A2400 / Ø24.0 |

WORKPIECE - Carbon Steel

| | |
|------|------|
| AISI | 1045 |
| DIN | C45 |
| JIS | S45C |

CONDITIONS

| | |
|---------------|---------------------------|
| Cutting Speed | 92 m/min |
| Feed | 0.35 mm/rev. |
| Feedrate | 427 mm/min |
| RPM | 1220 rev./min |
| Drilling | 72.0 mm |
| Coolant | Internal |
| Machine type | Vertical Machining Center |

RESULT



YG-1 i-Dream Drill



COMPETITOR



TOOL

| | |
|--------|------------------|
| HOLDER | ZH14005020 |
| INSERT | YB2C1400 / Ø14.0 |

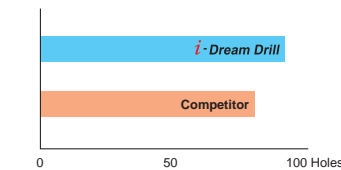
WORKPIECE - Stainless Steel

| | |
|------|-----------|
| AISI | 304 |
| DIN | X5CrNi189 |
| JIS | SUS304 |

CONDITIONS

| | |
|---------------|---------------------------|
| Cutting Speed | 55 m/min |
| Feed | 0.15 mm/rev. |
| Feedrate | 188 mm/min |
| RPM | 1250 rev./min |
| Drilling | 50.0 mm |
| Coolant | Internal |
| Machine type | Vertical Machining Center |

RESULT



YG-1 i-Dream Drill



COMPETITOR





Make sure to clean the insert and insert seat.



Slide the drill insert into the slot of the holder and press down the insert to touch the bottom of the slot.

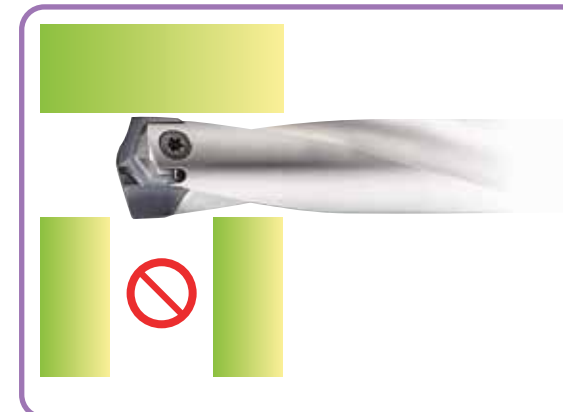


After confirming the insert is pressed down to the bottom of the slot, tighten the screw using anti-seize compound.

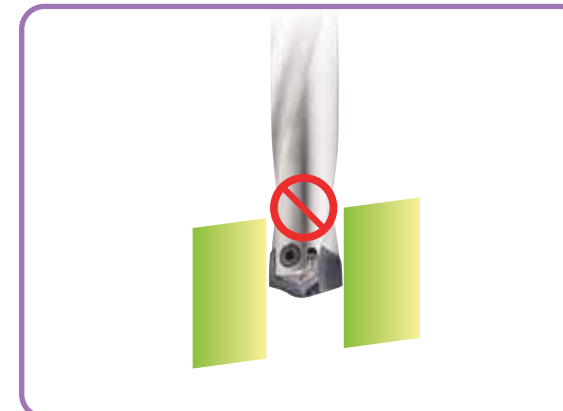
| WRENCH TYPE | PRODUCT No. | T-HANDLE No. | SERIES (SIZE) |
|--|-------------|--------------|-------------------------|
|  WING TYPE | TWWT08 | — | A (Ø12.00~Ø13.99) |
| | | | B (Ø14.00~Ø15.99) |
| | | | C (Ø16.00~Ø17.99) |
|  TORX BIT TYPE | TWBT15 | TWH600 | D (Ø18.00~Ø19.99) |
| | TWBT20 | | E, F, G (Ø20.00~Ø25.99) |
| | TWBT25 | | H, I, J (Ø26.00~Ø31.99) |

Use the wing type or T-type wrench.

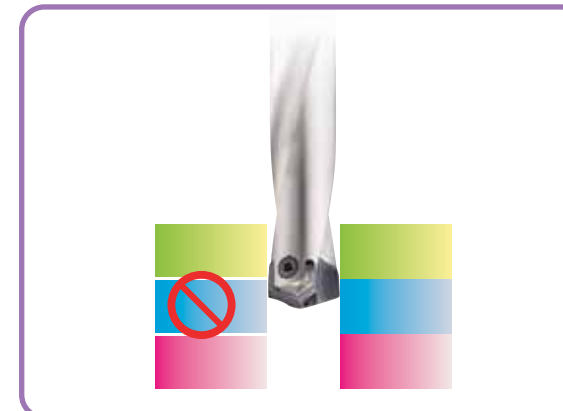
- ▶ Need to use appropriate wrenches and screws as indicated.
- ▶ It's important to tighten up the screw properly.



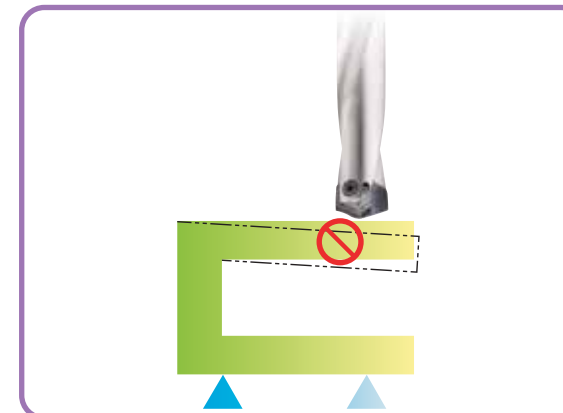
Intersecting cross hole is bigger than the drill insert's Margin Length.



Material with slanting entrance and exit over 7 degree. (If drilling 7 degree or under slanting surface, reduce the feed about 30-50%)

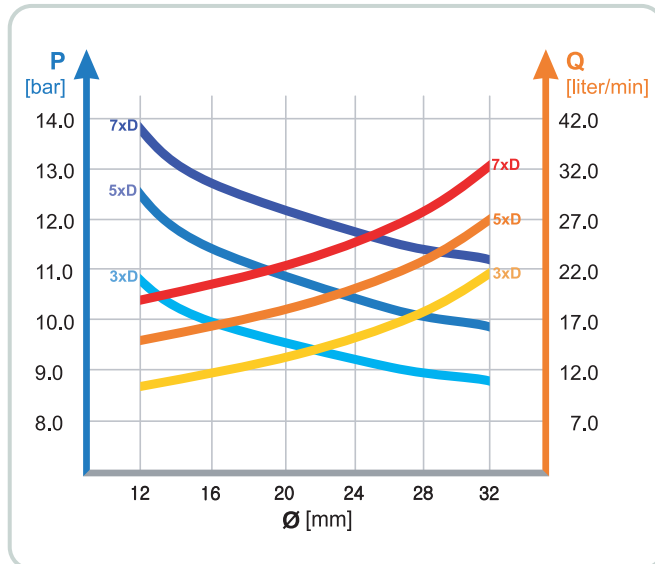


For drilling stacked plates, minimize the space between the plates. The space stacked plates can cause insert breakage or poor chip control.



The material needs to be fixtured securely before drilling.

Recommended Coolant Pressure and Flow Rate on Vertical Drilling



- Recommended emulsion mix is 6% - 8%.
- For Drilling in Stainless and High Strength steels, a mix of 10% is recommended.
- For horizontal drilling, 30% reduction on the coolant pressure and flow rate is possible.
- Dry drilling is possible for 1-2xD drilling. But not recommended.

Trouble Shooting



- 1) Heavy flank wear / Fast flank wear**
- Reduce cutting speed
 - Increase feed



- 2) Chipping on cutting edge**
- Reduce feed
 - Check the rigidity of spindle and chuck
 - Rigid clamping of workpiece



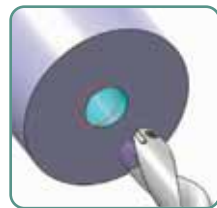
- 3) Build up on cutting edge**
- Increase cutting speed
 - Use a coated insert



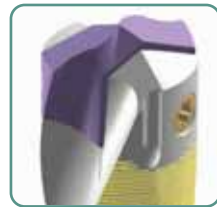
- 4) Chipping or break down on outer corner**
- Reduce feed
 - Rigid clamping of workpiece



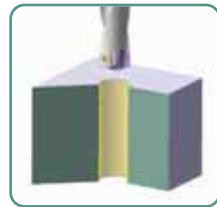
- 5) Wear of land margin**
- Rigid clamping of workpiece
 - Reduce cutting speed
 - Increase coolant flow



- 6) Unsatisfactory positioning of the hole**
- Rigid clamping of workpiece
 - Reduce feed during entrance or exit



- 7) Scratching on holder**
- Rigid clamping of workpiece
 - Reduce feed
 - Increase coolant flow



- 8) Unsatisfactory surface finish**
- Rigid clamping of workpiece
 - Increase coolant flow and pressure