



Feature

- NT Hyper Spindles (Spindle speed increaser)
- Maximum 30,000 RPM - 1:5 Gear Ratio
- Available in CAT and BT tapers.
- NT's use of precision ground steel gears assures low noise and vibration.
- Tool Shanks as small as 0.5mm (0.02in) (FDC 07 series), all the way up to 12.7mm (0.500in) (FDC 12 series) can be chucked
- Overheating is prevented by the use of a cooling turbo fan.
- Increase your machine's RPM output with Hyper Spindle!

1:5 Ratio = 30,000 RPM!!

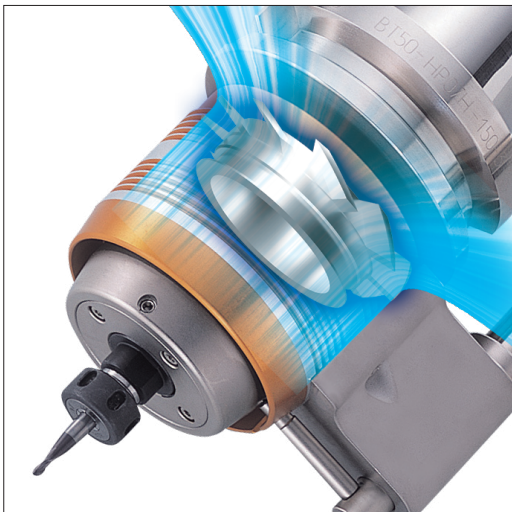
Increase your tooling speed up to **5 TIMES** faster!

Hyper Spindles increase your tooling RPMs up to 5 times faster (maximum 30,000RPM), enabling you to reduce your per-piece cost with your current machines instead of installing new machines.

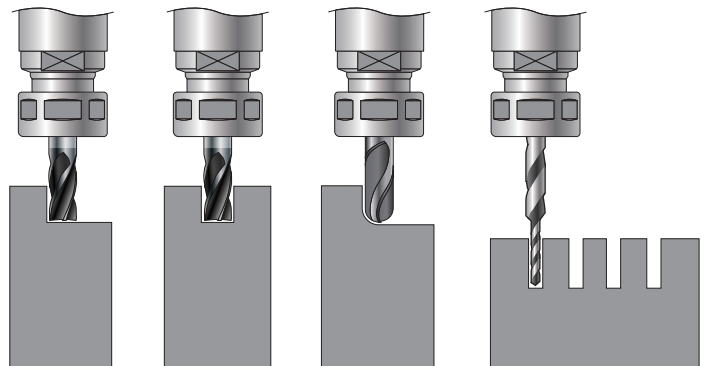


***High speed applications are possible on BT/CAT 50 machines!**

Inner Turbine Prevents Overheating



Hyper Spindle Uses

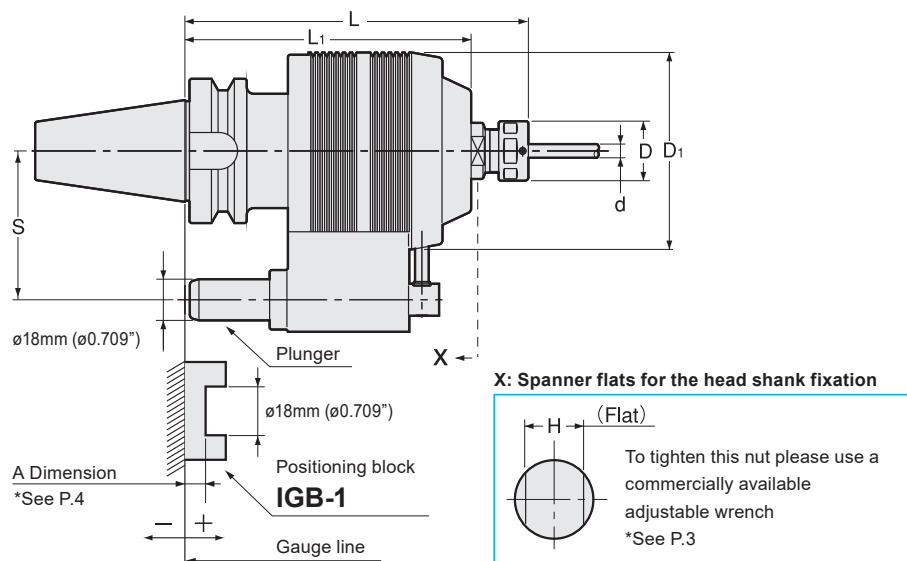


Hyper Spindle can be used in Ball Nose End Milling, Small Diameter Drilling, End Milling and Rough/Finish Milling.

HP-H

Hyper Spindle (Speed Increaser)

- Enables high speed cutting operation by multiplying the machine spindle speed at the cutting edge. (Max30000min⁻¹)



Unit : Metric

Model	L	S	d	D	D1	L1	Nut	H	Gear Ratio	MAX min ⁻¹	kg	Collet	Spanner
BT40 or CAT40 -HP07H -150 -※	150	65	0.5 ~ 7.0	23	86	125	HDP-07A	16	1:5	30,000	3.4	FDC-07AA	S-0L
-180 -※	180	65	0.5 ~ 7.0	23	86	125	HDP-07A	16		30,000	3.5	FDC-07AA	S-0L
BT40 or CAT40 -HP09H -150 -※	150	65	2.6 ~ 9.0	26	86	125	HDP-09	21		30,000	3.4	FDC-09AA	S-1L
-180 -※	180	65	2.6 ~ 9.0	26	86	125	HDP-09	21		30,000	3.5	FDC-09AA	S-1L
BT40 or CAT40 -HP12H -165 -※	165	65	2.6 ~ 12.0	32	86	125	HDP-12	21	1:5	30,000	3.5	FDC-12AA	S-3L
-180 -※	180	65	2.6 ~ 12.0	32	86	125	HDP-12	21		30,000	3.6	FDC-12AA	S-3L
BT50 or CAT50 -HP07H -150 -※	150	80	0.5 ~ 7.0	23	86	125	HDP-07A	16		30,000	5.9	FDC-07AA	S-0L
-180 -※	180	80	0.5 ~ 7.0	23	86	125	HDP-07A	16		30,000	6.0	FDC-07AA	S-0L
BT50 or CAT50 -HP09H -150 -※	150	80	2.6 ~ 9.0	26	86	125	HDP-09	21	1:5	30,000	5.9	FDC-09AA	S-1L
-180 -※	180	80	2.6 ~ 9.0	26	86	125	HDP-09	21		30,000	6.0	FDC-09AA	S-1L
BT50 or CAT50 -HP12H -165 -※	165	80	2.6 ~ 12.7	32	86	125	HDP-12	21		30,000	6.0	FDC-12AA	S-3L
-180 -※	180	80	2.6 ~ 12.7	32	86	125	HDP-12	21		30,000	6.0	FDC-12AA	S-3L

- Collet and spanner are sold separately.
- When ordering please specify the plunger number (No.1-No.5)
- The most common/popular size is No.3
- Plunger is adjustable. Please refer to the chart to the right.
- When you place an order for a positioning block with us, please provide us with the detailed information of your existing machine spindle design.
- Use AA class collets only.
- HP-H is not capable of center through coolant.

Plunger table

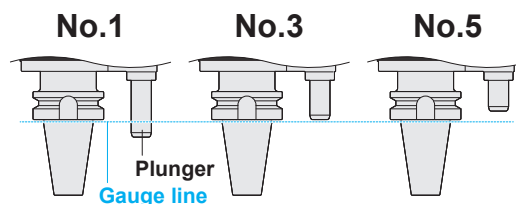
Model	Plunger No. A				
	No.1	No.2	No.3	No.4	No.5
All Model	+24~+15.1	+15~+6.1	+6~-2.9	-3~-11.9	-12~-20.9

Ordering Example

BT40 - HP 07 H - 150 - 3
 Shank size Max. collet I.D. Projection length (L) Plunger No.

Max Rotational Speed and Chucking Accuracy

Model	Collet size	Speed Ratio	Max. speed	Chucking accuracy
HP07H	FDC07	1:5	30,000min ⁻¹ (M/C 6,000min ⁻¹)	10μm/4D (0.0004"/4D)
HP09H	FDC09			
HP12H	FDC12			



FDC-AA

High-Precision Collet



Tool shank dia.		Model		
mm (inch)	inch	FDC-07	FDC-09	FDC-12
φ 1.0 ~ 0.5	φ 0.039 ~ 0.020	FDC-01007	—	—
φ 1.5 ~ 1.0	φ 0.059 ~ 0.039	FDC-01507	—	—
φ 2.0 ~ 1.5	φ 0.079 ~ 0.059	FDC-02007	—	—
φ 2.5 ~ 2.0	φ 0.098 ~ 0.079	FDC-02507	—	—
φ 3.0 ~ 2.5	φ 0.118 ~ 0.098	FDC-03007	FDC-03009	FDC-03012
φ 3.5 ~ 3.0 (1/8")	φ 0.138 ~ 0.118	FDC-03507	FDC-03509	FDC-03512
φ 4.0 ~ 3.5	φ 0.157 ~ 0.138	FDC-04007	FDC-04009	FDC-04012
φ 4.5 ~ 4.0	φ 0.177 ~ 0.157	FDC-04507	FDC-04509	FDC-04512
φ 5.0 ~ 4.5 (3/16")	φ 0.197 ~ 0.177	FDC-05007	FDC-05009	FDC-05012
φ 5.5 ~ 5.0	φ 0.217 ~ 0.197	FDC-05507	FDC-05509	FDC-05512
φ 6.0 ~ 5.5	φ 0.236 ~ 0.217	FDC-06007	FDC-06009	FDC-06012
φ 6.5 ~ 6.0 (1/4")	φ 0.256 ~ 0.236	FDC-06507	FDC-06509	FDC-06512
φ 7.0 ~ 6.5	φ 0.276 ~ 0.256	FDC-07007	FDC-07009	FDC-07012
φ 7.5 ~ 7.0	φ 0.295 ~ 0.276	—	FDC-07509	FDC-07512
φ 8.0 ~ 7.5 (5/16")	φ 0.315 ~ 0.295	—	FDC-08009	FDC-08012
φ 8.5 ~ 8.0	φ 0.335 ~ 0.315	—	FDC-08509	FDC-08512
φ 9.0 ~ 8.5	φ 0.354 ~ 0.335	—	FDC-09009	FDC-09012
φ 9.5 ~ 9.0	φ 0.374 ~ 0.354	—	—	FDC-09512
φ 10.0 ~ 9.5 (3/8")	φ 0.394 ~ 0.374	—	—	FDC-10012
φ 10.5 ~ 10.0	φ 0.413 ~ 0.394	—	—	FDC-10512
φ 11.0 ~ 10.5	φ 0.433 ~ 0.413	—	—	FDC-11012
φ 11.5 ~ 11.0 (7/16")	φ 0.453 ~ 0.433	—	—	FDC-11512
φ 12.0 ~ 11.5	φ 0.472 ~ 0.453	—	—	FDC-12012
φ 12.7 ~ 12.2	φ 0.484 ~ 0.500	—	—	FDC-12712

Selection example of collet

Accuracy
(4 × d)

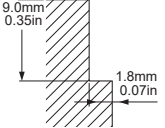
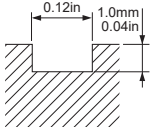
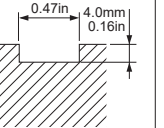
AA
(5μm)

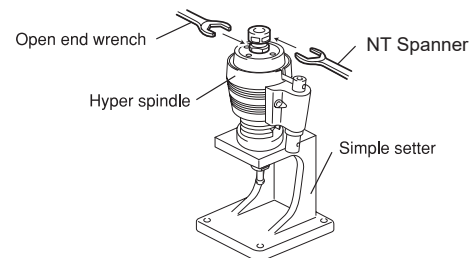
Ordering Example

FDC - 010 07 AA
 Max. chucking dia. 12 Series Accuracy

To clamp φ10.0 tool shank, there are 2 collets, φ10.0 and φ10.5 collets.
 We suggest you select φ10.0 collet for higher accuracy.
 AA Collets collapse by 0.5mm.

Cutting data

	BT50-HP07H-150	BT50-HP07H-150	BT50-HP12H-165
Work material	(A2017) aluminium alloys		
Rotational speed	30,000min ⁻¹		
Feed [mm(inch)]	1200 (47.28)	900 (35.43)	1200 (47.28)
Mil dia [mm(inch)]	6.0 (0.24)	3.0 (0.12)	12.0 (0.47)
Depth of cut	 Two-flute endmill (HSS)	 Two-flute carbide endmill	 Two-flute carbide endmill



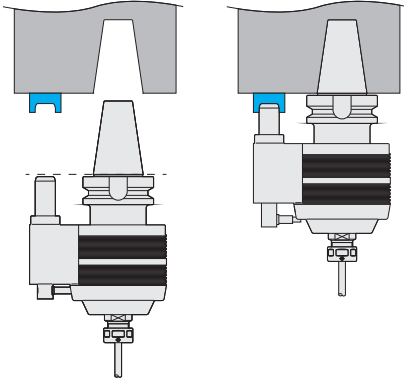
Standard Tightening Torque Chart

Metric

Holder size	Open end wrench size	NT Spanner	Standard Tightening Torque
HP07H	16 *	S-0	10~15N·m
HP09H	21 *	S-1L	30~35N·m
HP12H	21 *	S-3L	35~40N·m

* : Commercially available

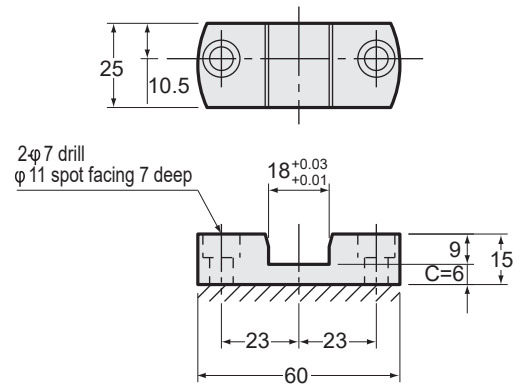
Positioning Block & Base Plate



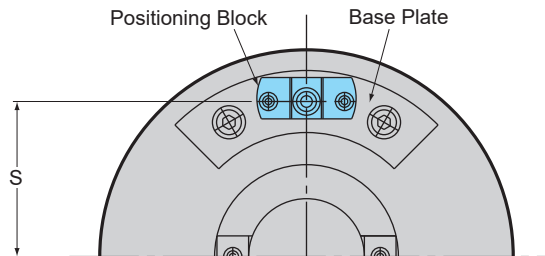
The positioning block engages the plunger must be pushed down 6mm which releases the internal shank allowing the Spindle to work.

Positioning block requires a baseplate. Please contact machine manufacturer for spindle surface design and NT USA for installation.

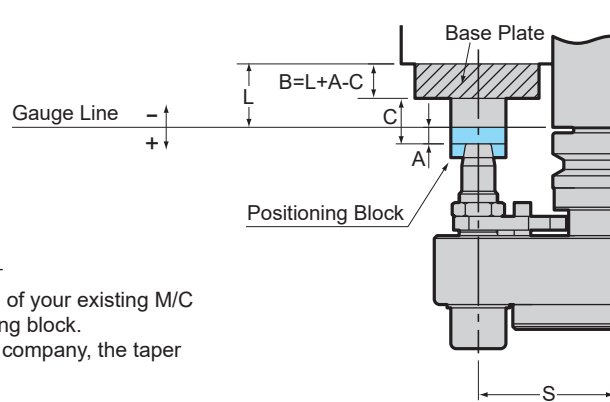
IGB-1 (40/50 Hyper Spindles)



In order to retrofit NT standard positioning blocks to your existing machine, a base plate shown below must be made. For more details, please contact NT USA.

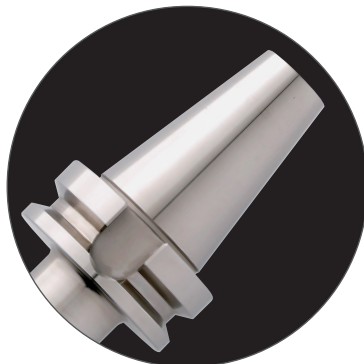


- Please provide us with the detailed information of your existing M/C when you place an order for a special positioning block.
- When using a positioning block made by other company, the taper angle must be the same as our design.

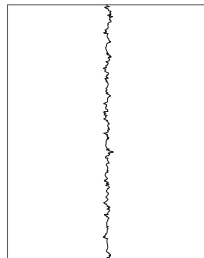


NT Tool Rustproofing

Rustproof



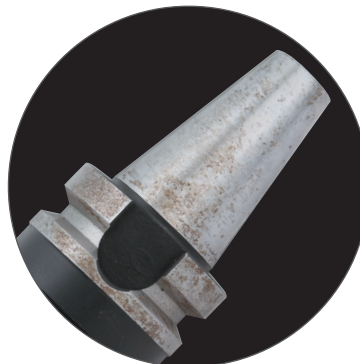
NT's special surface treatment



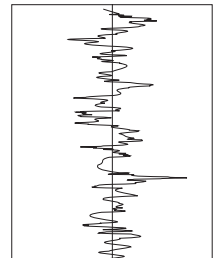
RMAX 0.8μ

NT TOOL's rust-proofed holders maintain processing accuracy without additional rust prevention.

Ordinary tooling



Rusted surface of standard product



RMAX 15μ

Without proper maintenance for rust prevention, ordinary tool holders will begin to rust after several days in use. This rust has negative effect on machining accuracy and/or spindle. When the taper area gets rusty, the runout accuracy of the tip of a cutting tool deteriorates by 0.01-0.02mm.