

# >>>> Helix | Helix-Y

Turn mill series



## *Multi-tasking Machines*

Series: 2050 | 2070 | 2550 | 2570

2050-Y | 2550-Y



[www.bfwindia.com](http://www.bfwindia.com)

Helix

**BFW**  
Bharat Fritz Werner

# »»»» Helix I Helix-Y

## Heavy Duty Horizontal Turn Mill

Helix series: 2050 | 2070 | 2550 | 2570 | 2050-Y | 2550-Y

Helix Series machines are made with single piece inclined bed cum saddle. They are built with heavy duty LM guide ways for rigidity and precise ball screws for higher accuracy.

Servo turret of BMT 65 provided as standard and it is the newest technology for turn mill centre for more rigid solutions.

Spindle, turret and tail stock axes are parallel with each other. It entitled to have during turning & milling and enables higher depth of cut.

### Best-in-class features

- Mono block construction of bed cum saddle with an inclined angle of 45 deg for Helix and ( 30 + 45) deg for Helix with Y- axis
- Highest bar capacity 65 | 75 | 90
- BMT 65- Base mount type servo turret of 12 stations
- All 12 stations can be used for live tool applications
- Swivel operator panel for operator easiness
- Lesser loading height from the floor and lesser distance from the door for clamping heavy components
- Basic TPM features

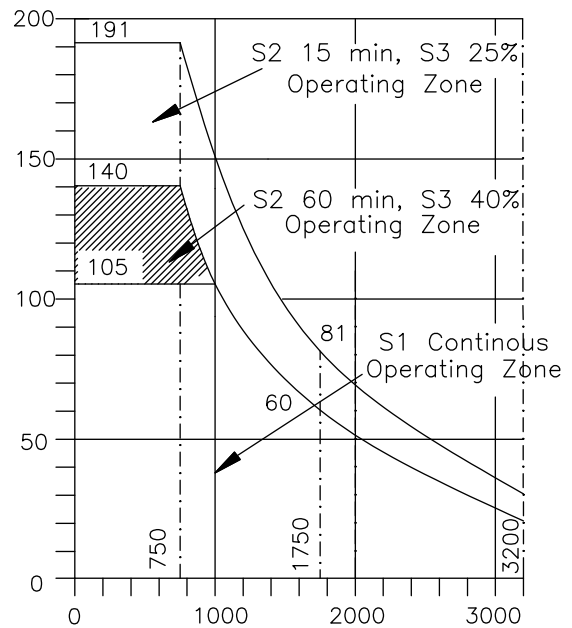
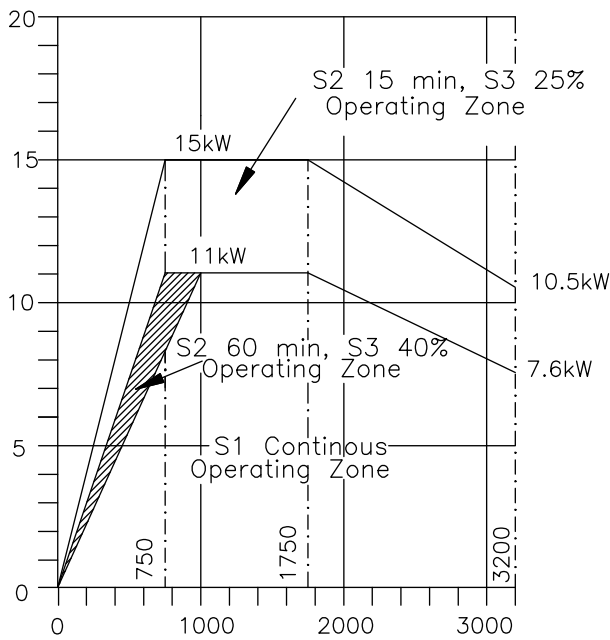


Displayed at Imtex 2019

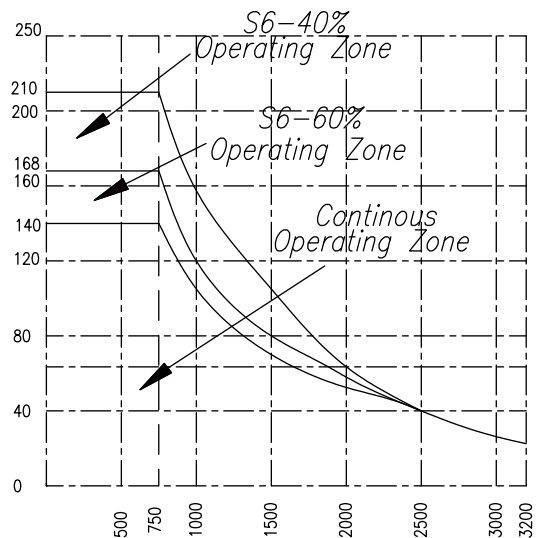
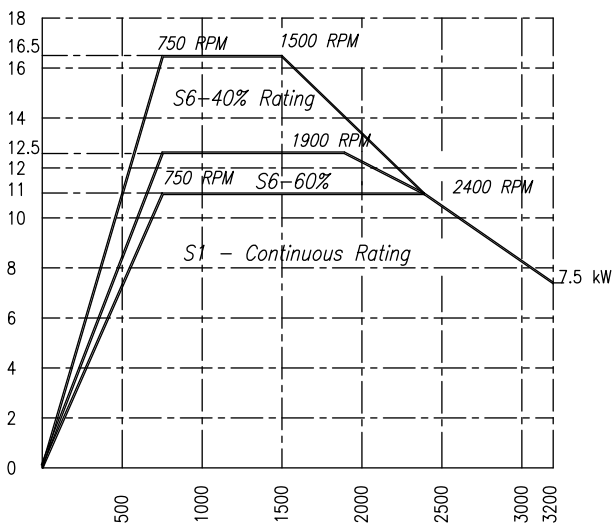
# Helix I Helix-Y

## Spindle Characteristics

Helix 2050 | 2070 | 2550 | 2570 | 2050-Y | 2550-Y (Fanuc - 11/15 kW)



Helix 2050 | 2070 | 2550 | 2570 | 2050-Y | 2550-Y (Siemens - 11/16.5 kW)



# Helix I Helix-Y

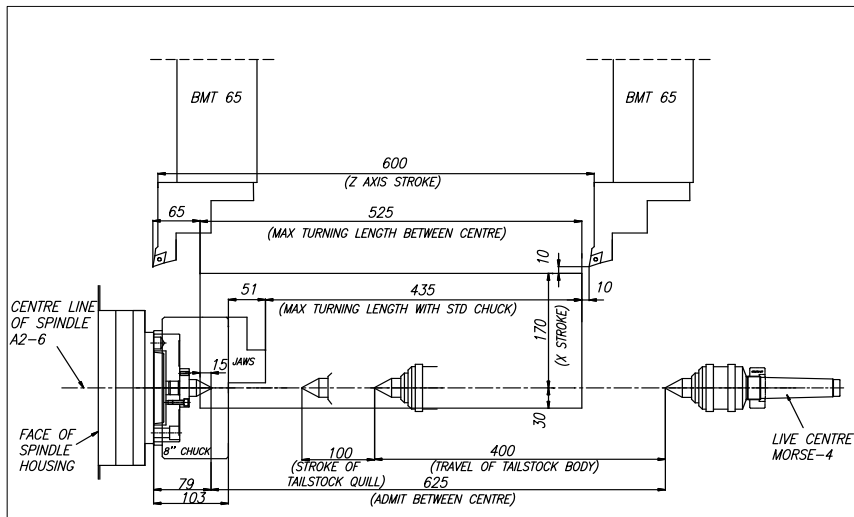
## Standard Features

- LM guide ways for all axis - Class H
- High precision ball screws - Class C3
- Belt driven spindle
- AC servo motor for spindle & axis
- Linear & Circular interpolation
- Laser calibration & Ball bar tested
- Rigid tapping
- 12- station hydraulic turret
- Tool display
- Rigid tap retraction push button
- 3 jaw self- centering chuck
- Solid rotary cylinder
- Tail-stock with programmable quill
- Coolant tank with chip tray
- Machine lamp
- Operations indication lamp- 3 colour
- AC unit for electrical cabinet
- Centralized lubrication system
- Maintenance tool kit

## Optional Features

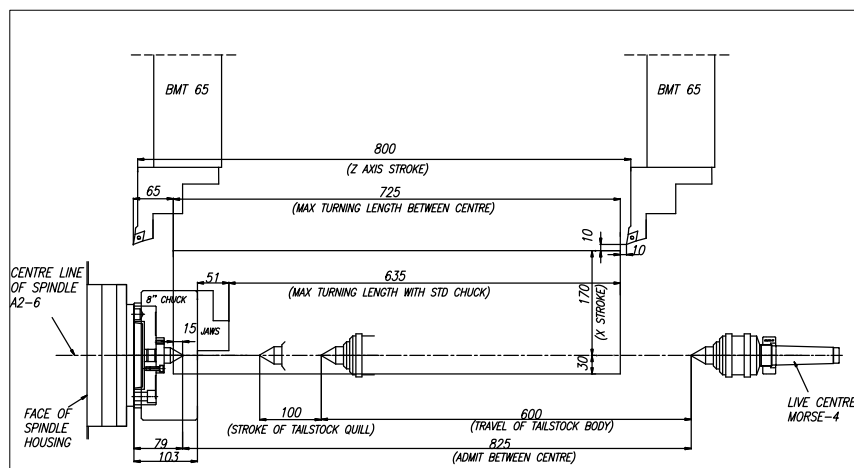
- 2 & 4 jaw self centering chuck
- Collet chuck
- Hollow cylinder
- Pneumatic operated auto door
- Chip conveyor with chip bin
- Door safety limit switch
- Bar feeder
- Part catcher
- Steady rest
- Tool probe
- Work probe
- Automation solutions
- Tooling up solutions

## Moving Range Diagrams



**HELIX 2050**

Main spindle A2-6  
Z axis stroke=600

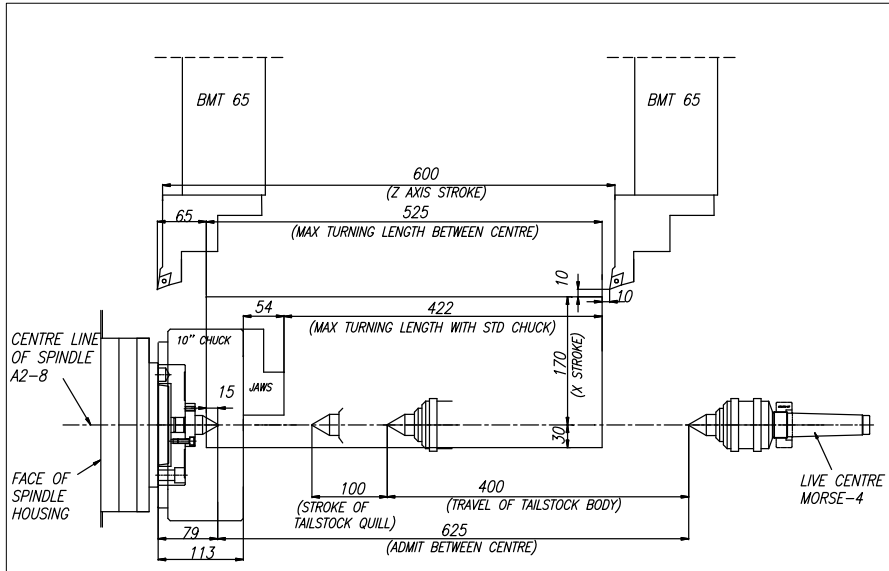


**HELIX 2070**

Main spindle A2-6  
Z axis stroke=800

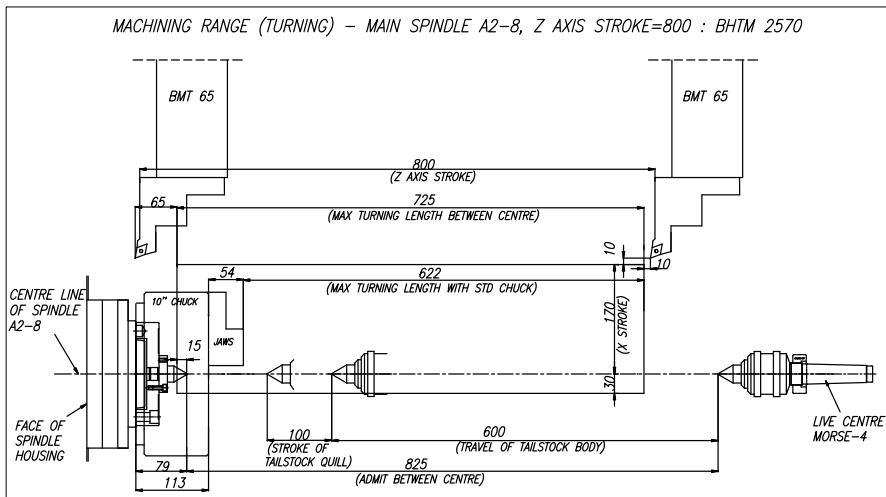
# Helix I Helix-Y

## Moving Range Diagrams



**HELIX 2550**

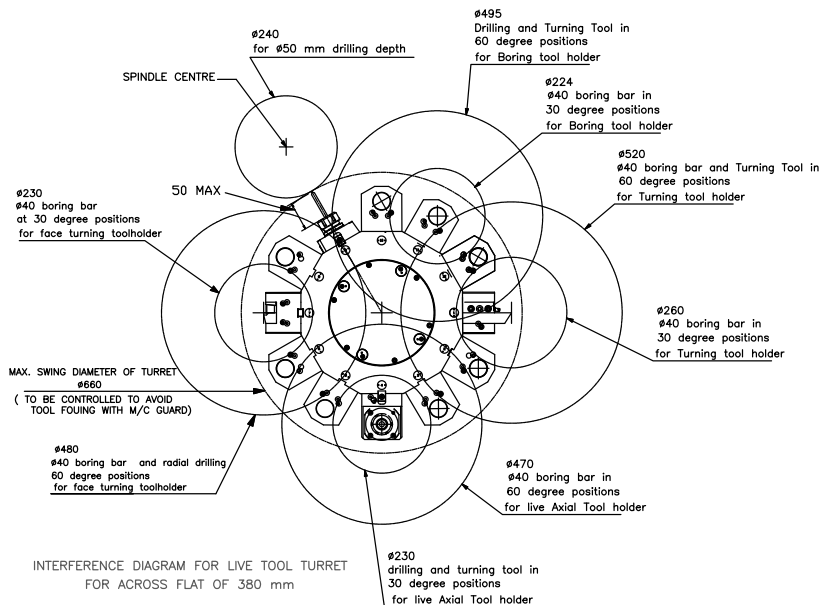
Main spindle A2-8  
Z axis stroke=600



**HELIX 2570**

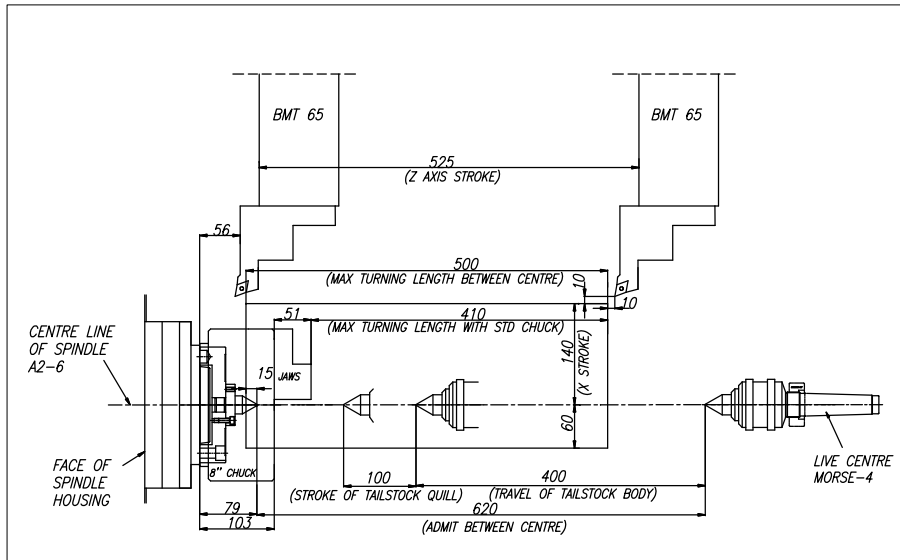
Main spindle A2-8  
Z axis stroke=800

## Interference Diagram - BMT 65 Turret



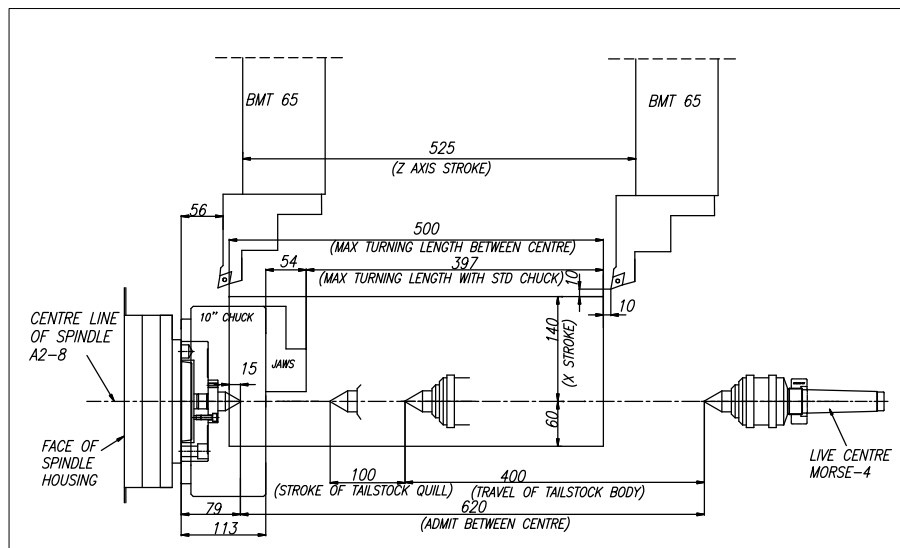
# Helix I Helix-Y

## Moving Range Diagrams



### HELIX 2050-Y

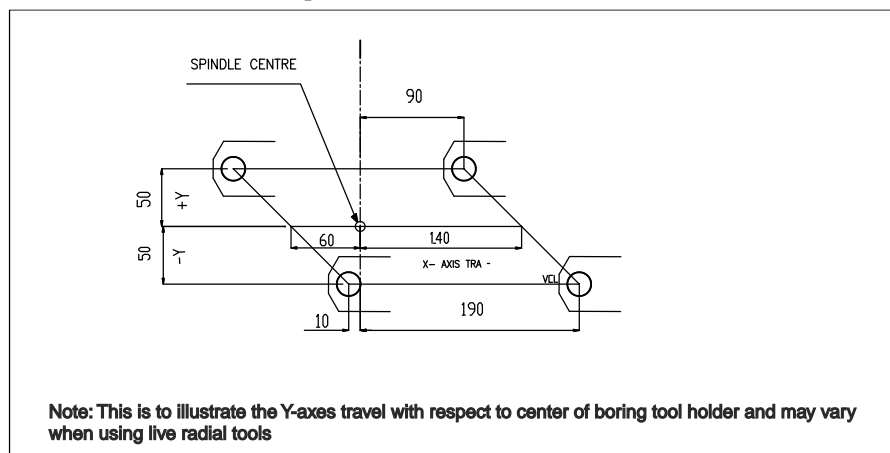
Main spindle A2-6  
Z axis stroke=525



### HELIX 2550-Y

Main spindle A2-8  
Z axis stroke=525

## Travel Envelope - 2050 Y



# »»»» Helix I Helix-Y

## Applications

Some of the suitable applications for Helix series; presented below:

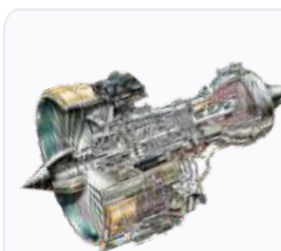


Some of the suitable applications for Helix-Y series; presented below:



many more...

## Sectors



Aerospace



Automobile



Tooling



Medical

# Helix I Helix-Y

## Technical Specifications

Specifications	Unit	HELIX 2050	HELIX 2070	HELIX 2550	HELIX 2570
<b>Capacity</b>					
Swing over bed	mm	550	550	550	550
Swing over carriage	mm	330	330	330	330
Admit between center distance	mm	625	825	625	825
Standard turning diameter (full length)	mm	330	330	330	330
Max turning diameter (disc - 80 mm length)	mm	360	360	360	360
Interference free turning dia(Tool collision dia with adjacent tool pocket)	mm	224	224	224	224
Max turning length between Tail-stock & Head-stock centre	mm	525	725	525	725
Max turning length from chuck hard jaw face to tailstock	mm	435	635	425	625
<b>Work holding &amp; tool holding</b>					
Standard chuck size	mm	250	250	250 (304)*	250 (304)*
Bar capacity	mm	65	65	75	75
Turret indexing mechanism	type	Servo	Servo	Servo	Servo
Turret type	type	BMT 65	BMT 65	BMT 65	BMT 65
Turret center height	mm	100	100	100	100
Turning Tool Shank size (B x W)	mm	25 x 25	25 x 25	25 x 25	25 x 25
No of tools	No.s	12	12	12	12
Boring tool holder dia	mm	40	40	40	40
<b>Spindle</b>					
Spindle nose	type	A2-6	A2-6	A2-8	A2-8
Spindle bore	mm	76	76	86	86
Number of bearing front/ rear	No.s	3/ 2	3/ 2	3/ 2	3/ 2
Spindle bearing front/ rear	mm	110/ 100	110/ 100	120/ 100	120/ 100
Spindle speed	rpm	3200	3200	3000 (2200)*	3000 (2200)*
Live tool speed	rpm	4000	4000	4000	4000
No of live tool stations	No.s	12	12	12	12
Live tool spindle power	kW	4.5 (Fanuc) 5.6 (Siemens)	4.5 (Fanuc) 5.6 (Siemens)	4.5 (Fanuc) 5.6 (Siemens)	4.5 (Fanuc) 5.6 (Siemens)
<b>Control system</b>					
Spindle motor power continues/ intermittent rating	kW	Fanuc - 11/ 15 Siemens 11/ 16.5	Fanuc - 11/ 15 Siemens 11/ 16.5	Fanuc - 11/ 15 Siemens 11/ 16.5	Fanuc - 11/ 15 Siemens 11/ 16.5
Full power range	rpm	Fanuc - 1000 -1750 Siemens 750 - 2400	Fanuc - 1000 -1750 Siemens 750 - 2400	Fanuc - 1000 -1750 Siemens 750 - 2400	Fanuc - 1000 -1750 Siemens 750 - 2400
<b>Traverse</b>					
Cross slide movement (X axis)	mm	200 (+150/ -50)	200 (+150/ -50)	200 (+150/ -50)	200 (+150/ -50)
Longitudinal movement ( Z axis)	mm	600	800	600	800
Rapid traverse ( X axis)	m/ min	20	20	20	20
Rapid traverse (Z axis)	m/ min	20	20	20	20
Cutting feed rate	m/ min	0 - 10	0 - 10	0 - 10	0 - 10
<b>Tailstock</b>					
Quill diameter	mm	80	80	80	80
Quill traverse	mm	100	100	100	100
Base traverse	mm	400	600	400	600
Quill taper	type	MT - 4	MT - 4	MT - 4	MT - 4
Quill thrust force - Max at 15 bar	kgf	300	300	300	300
<b>Fluid system</b>					
Coolant tank capacity	ltr	160	180	160	180
Coolant pump capacity	lpm	160	180	160	180
Coolant pump capacity	lpm	200	200	200	200
Lubrication tank capacity (servo 68)	ltr	2.7	2.7	2.7	2.7
Hydraulic tank capacity (Servo 68)	ltr	40	40	40	40
Hydraulic pump capacity	lpm	20	20	20	20
Hydraulic system pressure	bar	35	35	35	35
<b>Accuracy as per ISO 230 - 2</b>					
Positioning X/ Z	mm	0.01	0.01	0.01	0.01
Positioning - C axis	arc sec	+/- 36	+/- 36	+/- 36	+/- 36
Repeatability - X/ Z	mm	0.007	0.007	0.007	0.007
<b>Machine installations</b>					
Machine dimension W x D X H	mm	3300 x 1700 x 1950	3550 x 1700 x 1950	3300 x 1700 x 1950	3550 x 1700 x 1950
Total connected load	kVA	30	30	30	30
Machine weight	kg	4300	4700	4400	4800

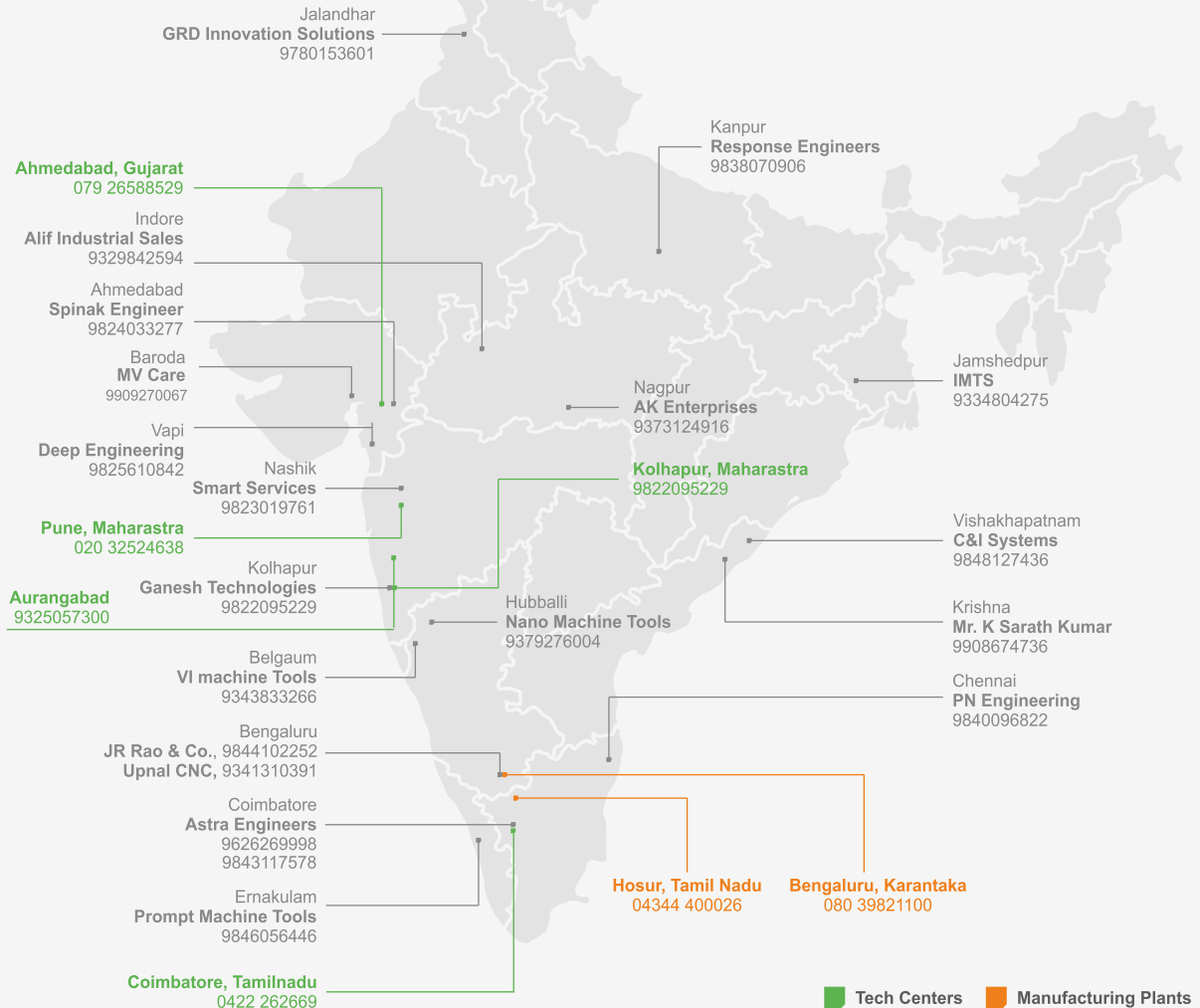


# Helix I Helix-Y

## Technical Specifications

Specifications	Unit	HELIX 2050 Y	HELIX 2550 Y
<b>Capacity</b>			
Swing over bed	mm	550	550
Swing over carriage (Y at zero position)	mm	280	280
Admit between center distance	mm	620	620
Standard turning diameter (Y at zero position)	mm	240	240
Max component dia at Y+50 position	mm	140	140
Maximum turning Dia (Disc - 80mm length)	mm	280	280
Interference free turning dia (Tool collision dia with adjacent tool pocket)	mm	224	224
Max turning length between Tail-stock & Head-stock centre	mm	500	485
Max turning length from chuck hard jaw face to tailstock centre	mm	410	395
<b>Work holding &amp; tool holding</b>			
Standard chuck size	mm	250	250
Bar capacity	mm	65	74
Turret indexing mechanism	type	Servo	Servo
Turret type	type	BMT 65	BMT 65
Turret center height		100	100
Turning Tool Shank size (B x W)	mm	25 x 25	25 x 25
No of tools	No.s	12	12
Boring tool holder dia	mm	40	40
<b>Spindle</b>			
Spindle nose	type	A2-6	A2-8
Spindle bore	mm	76	86
Number of bearing front/ rear	No.s	3/ 2	3/ 2
Spindle bearing front/ rear	mm	110/ 100	120/ 100
Spindle speed	rpm	3200	3000
Live tool speed	rpm	4000	4000
No of live tool stations	No.s	12	12
Live tool spindle power	kW	4.5 (Fanuc)   5.6 (Siemens)	4.5 (Fanuc)   5.6 (Siemens)
<b>Control system - Fanuc/ Siemens</b>			
Spindle motor power continues/ intermittent rating	kW	Fanuc - 11/ 15   Siemens 11/ 16.5	Fanuc - 11/ 15   Siemens 11/ 16.5
Full power range	rpm	Fanuc - 1000 -1750   Siemens 750 - 2400	Fanuc - 1000 -1750   Siemens 750 - 2400
<b>Traverse</b>			
Cross slide movement (X axis)	mm	200 (+140/ -60)	200 (+140/ -60)
Longitudinal movement ( Y axis)	mm	+/- 50	+/- 50
Longitudinal movement ( Z axis)	mm	525	525
Rapid traverse ( X axis)	m/ min	20	20
Rapid traverse ( Y axis)	m/ min	12	12
Rapid traverse (Z axis)	m/ min	20	20
Cutting feed rate	m/ min	0 - 10	0 - 10
<b>Tailstock</b>			
Quill diameter	mm	80	80
Quill traverse	mm	100	100
Base traverse	mm	400	400
Quill taper	type	MT - 4	MT - 4
Quill thrust force - Max at 15 bar	kgf	300	300
<b>Fluid system</b>			
Coolant tank capacity	ltr	160	160
Coolant pump capacity	lpm	200	200
Lubrication tank capacity (servo 68)	ltr	2.7	2.7
Hydraulic tank capacity (Servo 68)	ltr	40	40
Hydraulic pump capacity	lpm	20	20
Hydraulic system pressure	bar	35	35
<b>Accuracy as per ISO 230 - 2</b>			
Positioning X/ Z	mm	0.01	0.01
Positioning - C axis	arc sec	+/- 36	+/- 36
Repeatability - X/ Z	mm	0.007	0.007
<b>Machine installations</b>			
Machine dimension W x D X H	mm	3100 x 1850 x 2100	3100 x 1850 x 2100
Total connected load	kVA	35	35
Machine weight	kg	4500	4600

# Network



## International Network

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- Qatar • Russia • Saudi Arabia • Sri Lanka • South Africa • Thailand • Turkey • UAE



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