

FullStage Technologies

Your qualified partner for
machine tool,
consulting
and management

History

- 1989 Establishment of consulting company O-Nichi
- 2006 Change of name to FST
- 2006 Adding new business areas
 - Machine tool
 - Automation technology
- 2006 Establishment of FullStage Japan and China
- 2007 Establishment of FullStage Technologies North America

Mission Statement

- We transfer business and technical know-how across diverse borders: between continents, countries and cultures. As a result, we are able to help customers find new solutions in international business.
- We provide our customers with the products that they want. This allows our customers to strengthen and expand their position in the market.
- Our assignment is to satisfy our customers' needs with a win-win solution.
- We are partners with our customers.
- Our employees are our most important asset.
- Assuming and overcoming challenges, maintaining a goal-driven attitude and the flexibility of each and every employee are the sources of our company's strength and energy.
- Together with our customers, we will pave the road for a successful future.

Our Strategy

Close partnership thru „CS“
(Customer Satisfaction)

- with the customer
- with the manufacturer

Our Aim

Development
of solutions for the benefit of
all partners against competition.

Global Sales Net

fullsage

European Headquarters München
USA
Japan
China



Business Areas

- Machine Tool
- Automation Technology
- Consulting, Management

Machine Tool

- CNC-Tube Bending Machines
- Tube Endform Machines
- Saws

Product Lines

- FullStage offers two different brands of bending systems.
- A high-tech version from Chiyoda Japan for markets where quality and detail solutions are the most important issues.
- An own brand which combines quality with affordability for markets like Asia and Eastern Europe where price is most important.



Chiyoda „BECS MASTER“ Series

- Chiyoda is the leading manufacturer of tube manipulation systems, mainly for automotive industry in Japan.
- „BECS Master“ machines are in preparation for the European market (CE) by Chiyoda.
- FullStage will offer Chiyoda tube bending machines and tube endforming machines to international markets.

Chiyoda „BECS MASTER“ Series

- Chiyoda machines are well known for their excellent quality and performance. (see: www.chiyoda-kogyo.co.jp)
- FullStage will offer Chiyoda machines with attractive prices.
- FullStage will offer service for Chiyoda machines world wide.

SP-Series

- CNC-controls tube bending machine (draw bending)
- Excellent manufacture
- Japanese quality machine
- Motoman-control
- Tube OD up to 150 mm as standard; up to 250 mm on special request
- From SP60 under Windows XP; smaller machines till end of 2007
- Storage under Windows XP to floppy disk or via USB
- TFT-Touchscreen
- Multiple programming
- 2 stacks of tooling in standard; additional stacks option
- 3 controlled axes, thereof depending on machine size 2 or 3 controlled servo motor axes
- Speed increase by about 20% (option)
- Simulationssoftware (option)

SP-Serie

Spezifikation	SP-6ST	SP-8SST	SP-15ST	SP-25ST	SP-30ST	SP-40ST	SP-60ST	SP-80ST	SP-100-ST	SP-120ST	SP-150ST
Number of tooling stacks	2	2	2	2	2	2	2	2	2	2	2
max. tube diameter (mm) steel	9,5	15,9	19,1	25,4	31,8	42,7	63,5	76,2	114,3	127	165,2
max. wall thickness (mm)	0,8	1,0	1,2	1,6	2,0	3,5	3,5	3,2	4,5	5,0	5,0
max. radius (mm)	50	50	60	100	150	200	200	350	350	500	700
max. radius difference (mm)	30	30	30	50	80	50	80	100		150	
max. bending angle (°)	190	190	190	190	190	190	190	190	190	190	190
max. tube length with mandrel (mm)	900	900	1500	1800	1800	2400	2400	3000	4000	5500	5500
Feeding speed (mm/sec)	1000	1000	1000	1000	1000	1000	700	400	400	400	400
Rotation speed (/sec)	960	270	270	270	270	250	250	135	90	20	20
Bending speed (/sec)	360	200	200	200	200	180	77	62	30	22,5	14
Repeatability feeding (mm)	0,05	0,05	0,05	0,05	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Repeatability rotation (°)	0,05	0,05	0,05	0,05	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Repeatability bending (°)	0,05	0,05	0,05	0,05	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Total weight (kg)	500	700	1000	1400	2000	2700	4200	6000	7500	14000	24000

SP-120ST



HYP-1D-Series

- CNC-controlled tube bending machine (draw bending)
- Excellent manufacture
- Japanese quality machine
- Motoman-control
- Tube OD up to 150 mm as standard; up to 200 mm on special request
- Two controlled booster axes (back and side) for tight radii
- Windows XP
- Storage under Windows XP to floppy disk or via USB
- TFT-Touchscreen
- Multiple programming
- 2 or 3 stacks of tooling as standard; additional stacks option
- 5 controlled axes, thereof depending on machine size 2 or 3 controlled servo motor axes
- Speed increase by about 10% (option)
- Special equipment (patent) for short tubes ends (option)
- Simulation software (option)

HYP-1D-Series

Spezification	HYP-25ST	HYP-40ST	HYP-60ST	HYP-80ST	HYP-100ST	HYP-120	HYP-150
Number of tooling stacks	2	3	3	3	2	2	2
max. tube diameter (mm) steel	22,2	42,7	54	80	114,3	127	139,8
max. wall thickness (mm)	1,2	2,5	2,0	2,0	2,3	3,5	
min./max. radius (mm) 1-1,5D	10-100	30-120	30-150	30-150	30-250	50-350	80-350
max. radius difference (mm)	30	30	50	50	50	80	
max. bending angle () with wiper die	120	120	120	120	120	120	120
max. bending angle() without wiper die	180	180	180	180	180	180	180
max. tube length with mandrel (mm)	1500	2000	2000	2000	3000	4000	4000
Booster force - back (t)	1,8	3,7	5	10	15	20	25
Booster force - side (t)	1,8	2	3	4	7	10	10
Feeding speed (mm/sec)	800	800	700	400	400	400	400
Rotation speed (/sec)	250	250	250	120	120	70	45
Bending speed (/sec)	180	90	77	60	60	22,5	15
Boster speed (mm/sec)	100	150	150	50	50	50	40
Repeatability feeding (mm)	0,05	0,05	0,1	0,1	0,1	0,1	0,1
Repeatability rotation ()	0,05	0,05	0,1	0,1	0,1	0,1	0,1
Repeatability bending ()	0,05	0,05	0,1	0,1	0,1	0,1	0,1
Total weight (kg)	2500	4000	6600	9000	12000	18000	30000

HYP-25ST

Created By
HYP-25ST
Unregistered version

www.avs4you.com
CNC Hyper Bender

HYP-60ST



SIM-Series

LOW PRICE
and
GOOD QUALITY

SIM-Series

- CNC-controlled tube bending machine (draw bending).
- Reliable and robust quality.
- User friendly machine interface.
- Low cost production in low cost country according to European design with high quality components from Germany and Japan.
- Comprehensive standard features include:
 - Windows XP OS
 - TFT touch screen monitor
 - Data storage on USB, CD-R or floppy
 - Integrated simulation software
 - 1 set standard tooling included
- Radii: Two or more (4 resp. 5 controlled servo axis).
- Push bending for free radii
- Additional punch capabilities available (option).

Specification

	SIM-15	SIM-25	SIM-35	SIM-50	SIM-65	SIM-80
Stacks of tooling	2 or Multi	2 or Multi	2 or Multi	2	2 or Multi	2 or Multi
max. Tube diameterr (mm)	16	25	38	50	65	80
max. Wall thickness (mm)	1,2	1,5	2,0	2,5	3,0	3,0
max. Radius (mm)	70	100	180	220	250	250
max. Radius difference (mm)	35	40	50	80	80	90
max. Bending radius ()	190	190	190	190	190	190
max. RTube length with mandrel (mm)	1400	1800	2000	2500	2500	3000
Feeding speed (mm/sec)	1300	1300	1200	1200	1200	850
Rotation speed (/sec)	360	360	360	270	240	240
Bending speed (/sec)	200	180	180	110	90	80
Repeatability feeding (mm)	0,1	0,1	0,1	0,1	0,1	0,1
Repeatability rotation ()	0,1	0,1	0,1	0,1	0,1	0,1
Repeatability bending ()	0,1	0,1	0,1	0,1	0,1	0,1
Weight (kg)	1400	1500	1900	2900	3200	6500

SIM-Series



SIM-25



SIM-80



SIM-130

SIM-15



SIM-25



SIM-80

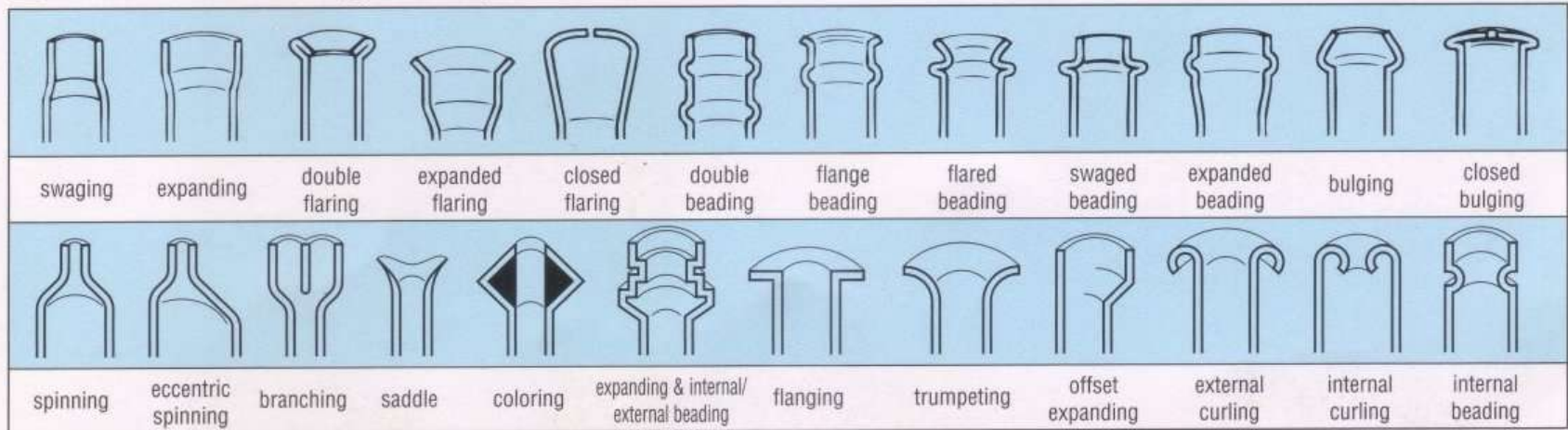


Tube End Forming

- Punching up to OD 80 mm
- Punch press machines pneumatic and hydraulic
- Vertical and horizontal movement
- 1-punch and 2-punches (standard)
- 3-punches and more (option)
- SMS-control
- Automation (option)
- Spinning/rotational forming) (single end, double end, eccentric)

Tube End Forming Shapes

■ tube-end working examples



Punching Machine

■ HWP-501VL

With tube loader (option)
Vertical clamp (option)



■ HWP-510



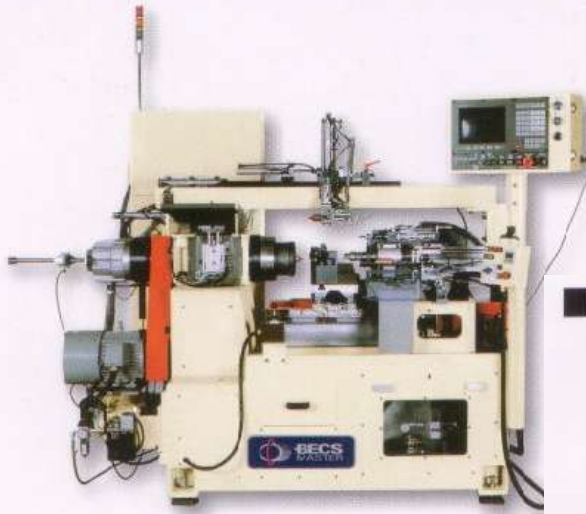
Spezifikation

	AWP-E	HWP-501	HWP-502	HWP-503	HWP-505	HWP-510	HWP-515
Diameter (mm)	16	19,1	30	40	50	60	80
Wall thickness (mm)	1	1,5	1,6	1,6	2	2	3
Forming cylinder (Ø)	180	100	25	38	50	65	80
Forming cylinder (stroke in mm)		80	100	150	150	200	300
Capacity (t)	1,2	4,3	5,3	10,0	20,0	35,0	50,0
Speed (1-punch/2-punches) (sec)	3	3/4,5	3,5/6	3,5/6	8/15	10/18	14/25
Drive mechanism	pneumatic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic	hydraulic
Weight (kg)	400	550	950	1500	2800	3000	3500

Spinning/Rotational Former

■ SPM-40 (single-end)

Rotational forming roller type NC control Air conditioners, accumulators, mufflers for automatic transmission vehicles, etc.



■ Rotary former

Variety of bead processing and forming with eccentric die rotation



■ RS-80 (double-end)

Simultaneous processing of tube-ends with rotational forming die



Automation

- Supplement to our machine tool
- Tube stocker and loader
- Integration into production cells
- Robot technology

Full-Service

- Installation
- Trouble shooting (phone-support, fax or email, on site)
- Hotline and 24 hours email support
- Repairs
- Original spare parts
- Operator training
- Maintenance training
- Machine moving to new location
- Machine overhaul

Consulting

- Technical, commercial and economical consulting
- Support for establishment of business connection in Asia, USA and Europe

We are ready
for a trustful and
long term
partnership

Thank you for
your attention

FullStage Technologies