

à la carte

Bending machines for all tastes

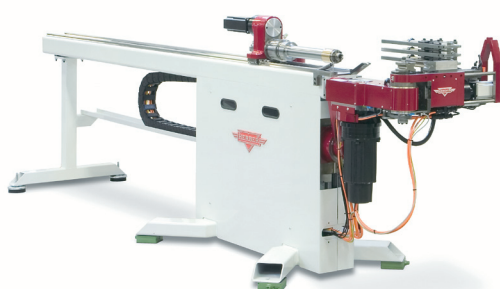




Bending machines for all tastes

Herber 75/150 S

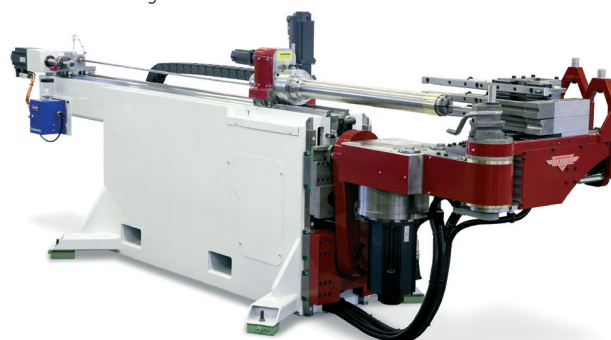
The 75/150 S has been optimized for bending tubes with an OD from 4–25 mm. The unique design allows maximum clearance around the bend head and coupled with multistack operation, it is possible to bend complex shapes without the need for intermediate tool changes.



ALL ELECTRICAL	75 S	150 S
Capacity, Ø mm	20 × 1,5	25 × 2
Radius, min/max	10/120	10/150
Bending speed/repeatability	0–650°/s. ±0,05°	0–450°/s. ±0,05°
Tube rotation	0–480°/sec	0–480°/sec
Tube positioning	0–1 900 mm/sec	0–1 900 mm/sec
Machine weight	650 kg	700 kg

Herber 300/700 S

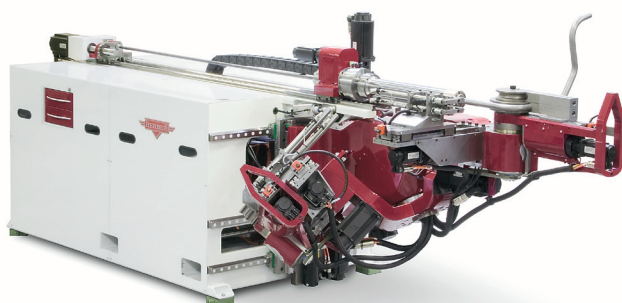
The 300/700 S has been optimized for bending tubes with an OD from 6–57 mm. The unique design allows maximum clearance around the bend head and coupled with multistack operation, it is possible to bend complex shapes without the need for intermediate tool changes.



ALL ELECTRICAL	300 S	700 S
Capacity, Ø mm	38 × 1,5	57 × 2
Radius, min/max	20/200	25/250
Bending speed/repeatability	0–300°/s. ±0,05°	0–190°/s. ±0,05°
Tube rotation	0–360°/sec	0–360°/sec
Tube positioning	0–1 850 mm/sec	0–1 850 mm/sec
Machine weight	2 500 kg	2 800 kg

Herber 300/700 DUAL

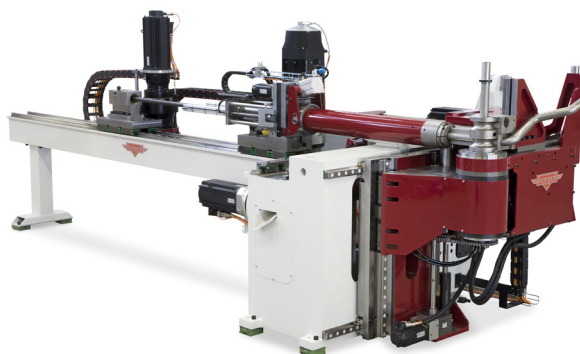
The Dual 300/700 is a multi-function CNC tube bending machine equipped with dual bend heads mounted alongside each other allowing for righthand & lefthand bends to be made consecutively and without the need for part transfer or tool changeover of any kind. Each bend head can be fitted with different types of tools for bending, end forming, hole punching or cutting.



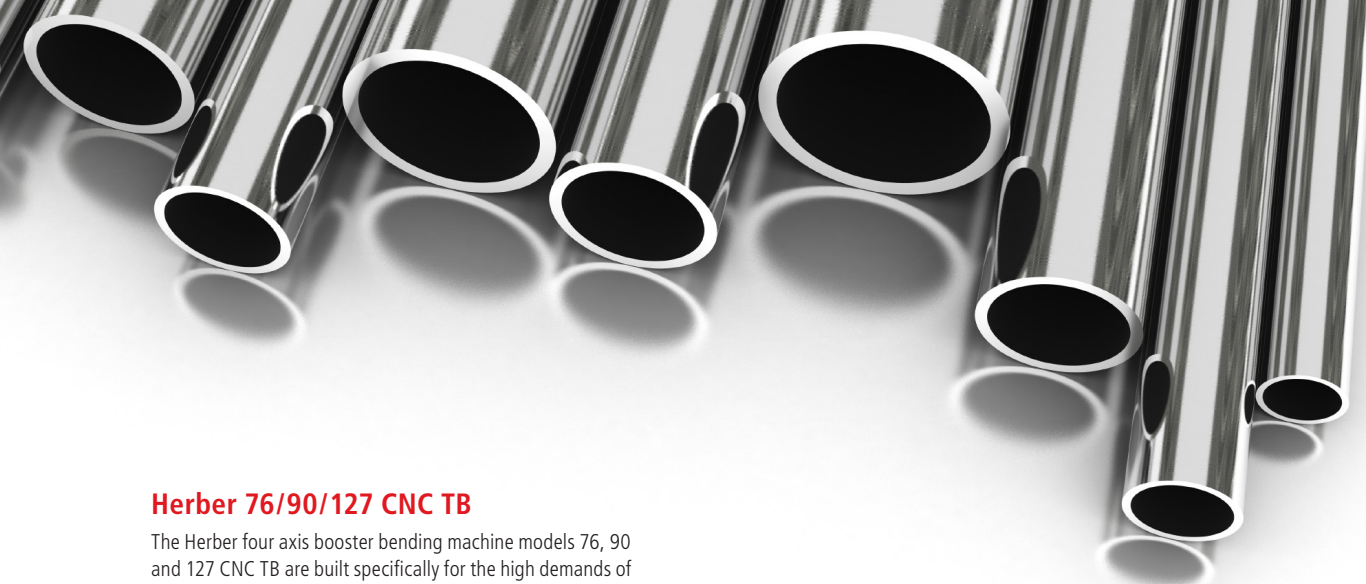
ALL ELECTRICAL	DUAL 300	DUAL 700
Capacity, Ø mm	38 × 1,5	57 × 1,5
Radius, min/max	20/200	20/250
Bending speed/repeatability	0–300°/s. ±0,05°	0–190°/s. ±0,05°
Tube rotation	0–360°/sec	0–360°/sec
Tube positioning	0–1 850 mm/sec	0–1 850 mm/sec
Machine weight	3 500 kg	4 100 kg

Herber 1100/2100 S

The 1100/2100 has been optimized for bending tubes with an OD from 20–110 mm. The unique design allows maximum clearance around the bend head and coupled with multistack operation, it is possible to bend complex shapes without the need for intermediate tool changes. In a lot of applications the unique Herber booster tube system will eliminate scrap and even a recut operation caused by a traditional booster system.

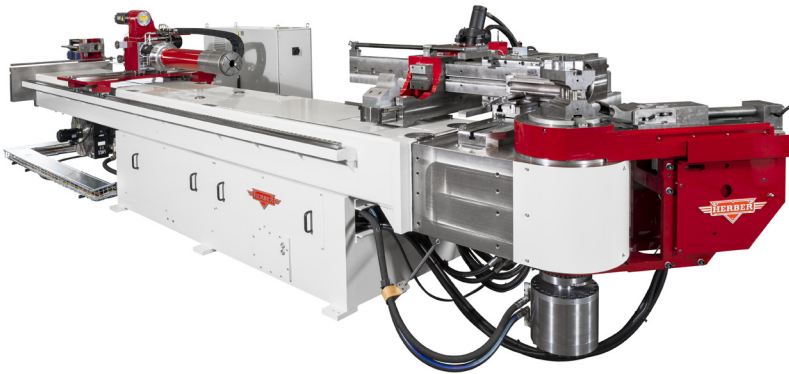


ALL ELECTRICAL	1100 S	2100 S
Capacity, Ø mm	80 × 1,5	110 × 1,5
Radius, min/max	20/300	30/350
Bending speed/repeatability	0–180°/s. ±0,05°	0–118°/s. ±0,05°
Tube rotation	0–280°/sec	0–280°/sec
Tube positioning	0–880 mm/sec	0–880 mm/sec
Machine weight	7 300 kg	7 600 kg



Herber 76/90/127 CNC TB

The Herber four axis booster bending machine models 76, 90 and 127 CNC TB are built specifically for the high demands of the worldwide boiler industry and comes completely equipped for coil bending with radii down to $1 \times D$.

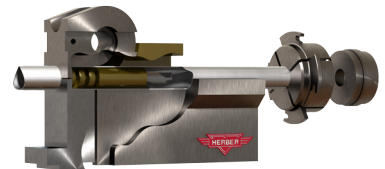


BOILER BENDER	76 CNC TB	90 CNC TB	127 CNC TB
Capacity, Ø mm	63 × 5	90 × 5	127 × 5
Radius, min/max	40/200	50/250	80/320
Bending speed/repeatability	0–40°/s. ±0,1°	0–40°/s. ±0,1°	0–24°/s. ±0,1°
Tube rotation	0–180°/sec	0–180°/sec	0–150°/sec
Tube positioning	900 mm/sec	900 mm/sec	900 mm/sec
Machine weight	12 000 kg	13 500 kg	17 000 kg



Control system

Our CNC Control system which is offered in many different languages has an incorporated simulation software/offline programming package along with an extensive database for tooling.

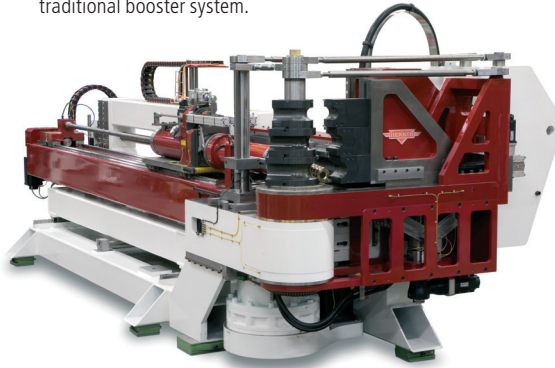


Bend tooling

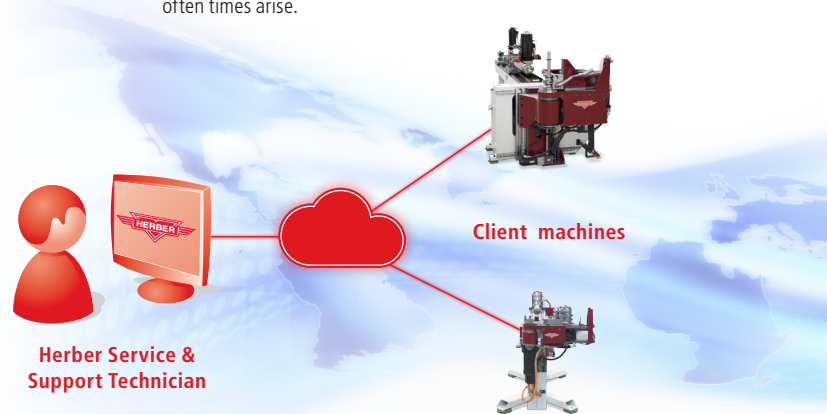
Herber designs and manufactures a complete range of different bend tool set options in house. This allows us to completely control the process and to turn key the best possible solution for our customers without the finger pointing between tool supplier and bender manufacturer that can often times arise.

Herber 4600/6300 S

The 4600/6300 has been optimized for bending tubes with an OD from 20–163 mm. The unique design allows maximum clearance around the bend head and coupled with multistack operation, it is possible to bend complex shapes without the need for intermediate tool changes. In a lot of applications the unique Herber booster tube system will eliminate scrap and even a recut operation caused by a traditional booster system.



ALL ELECTRICAL	4600 S	6300 S
Capacity, Ø mm	110 × 3	163 × 2
Radius, min/max	25/450	25/370
Bending speed/repeatability	66°/s. ±0,05°	50°/s. ±0,05°
Tube rotation	0–205°/sec	0–205°/sec
Tube positioning	0–600 mm/sec	0–330 mm/sec
Machine weight	27 000 kg	27 000 kg



Herber Service & Support Technician

Client machines

Herber Remote Support™

The Herber Remote Support™ function allows real time online process monitoring and swift failure detection from any where in the world. The customer can authorize Herber Engineering AB to give local technicians and maintenance personnel the immediate online support they need to get your machine back up and running with minimal down time and cost.



Your No.1 choice for advanced tube forming machinery and solutions

Herber Engineering AB has been manufacturing cold forming machinery for tube since 1945. Our mission is to deliver custom tailored solutions to a customer's specific problem. Every machine can be fully customized to a customer's specific requirement and precision in every exacting detail is one of our key principles.

Herber service & support

A good preventive maintenance plan is the key to safe, secure production but despite good maintenance, operating disruptions can still arise, in which case Herber is there to help you get the machine back online as quickly as possible.

Our service organization is just a telephone call away. The electronics in our machines enable online diagnostics to be set up between your machine and our technical team members for rapid fault detection and correction. If telephone support or online diagnostics is not enough to repair the issue our service vehicles and team members are on call with a mobile stock of spare parts. Wherever you are we will be there as quickly as we can to help facilitate a quick return to full operating capacity.



HERBER ENGINEERING AB

PO Box 203, SE-331 22 Värnamo, Sweden.
Phone: +46 (0)370-69 95 50, Fax +46 (0)370-156 25, info@herber.se
www.herber.se



TUBE BENDING GUIDE

www.herber.se



Your No.1 choice in advanced tube forming solutions

Bula vid slutet av bocken

1. Justera dorn bakåt tills bulan är borta. Detta är också ett bra sätt att få dornen i rätt position.
2. Justera i programmet dorn bakåt vid xx grader före uppnådd slutvinkel.
3. Öka trycket på stödskenan.



Låsback Clamp

Hump at end of bend

1. Adjust mandrel slightly back from tangent until hump is barely visible. This is also a good system to find the best location for the mandrel.
2. Adjust in the program mandrel backwards at xx degrees before finish bend.
3. Increase force on pressure die assist.

Märke av profilskivan och stödskenan på rörets centrumlinje

1. Minska trycket på stödskenan.
2. Röret är för stort i förhållande till verktyget.
3. Justera höjden på stödskenan.



Låsback Clamp

Tool marks on centerline of bend in clamp and pressure die area

1. Reduce pressure and clamp die forces.
2. Oversized tube or undersized tube groove from bad tooling source.
3. Adjust height of pressure die.



Utsidan för platt /röret ovalt, med eller utan rynkor i bocken

1. Kontrollera dorn sliten ev. justering framåt.
2. Dorn behöver fler kulor för att hålla ut röret i hela bocken.



Låsback Clamp

Excessive collapse with or without wrinkling throughout entire bend

1. Advance mandrel toward tangency until slight hump occurs (most mandrels must project some what past tangent).
2. Need more balls on mandrel.

Märke av kulor i bocken

1. För mycket broms på röret. Släpp ut stödskenan – öka vinkeln mellan stödsko och rör.
2. Vid tunnväggigt rör och/eller liten radie används ev. "close pitch" dorn (mindre distans mellan kulorna).
3. Materialet är för mjukt.
4. Öka trycket och/eller hastigheten på stödskenan.



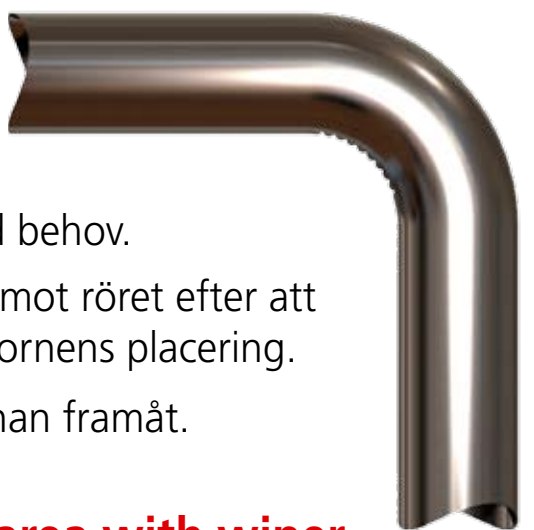
Låsback Clamp

Mandrel ball humps

1. Too much drag on tube; back off pressure die force – increase wiper die rake.
2. May require closer pitch mandrel ball assembly.
3. Tubing material too soft.
4. Increase force on pressure die assist.

Rynkor i bocken fast stödsko och dorn är i rätt position

1. Kontrollera dorn (sliten?) Byt vid behov.
2. Sätt mer tryck med stödskenan mot röret efter att ha kontrollerat stödskons och dornens placering.
3. Minska hastigheten på stödskenan framåt.



Låsback Clamp

Wrinkles throughout bend area with wiper and mandrel in known proper position

1. Check for undersized mandrel.
2. Increase pressure die force only after checking wiper fit and mandrel location.
3. Reduce force on pressure die advance.

Rynkor i bockens insida

1. Testa med stödsko.
2. Används stödsko, justera framåt tills rynkorna är borta eller byt stödsko.
3. Kontrollera stödskons vinkel i förhållande till verktyget.



Låsback Clamp

Wrinkling throughout bend

1. Test with wiper die.
2. Advance wiper die closer to tangent.
3. Decrease rake of wiper die.

Djupa revor i stödsko området

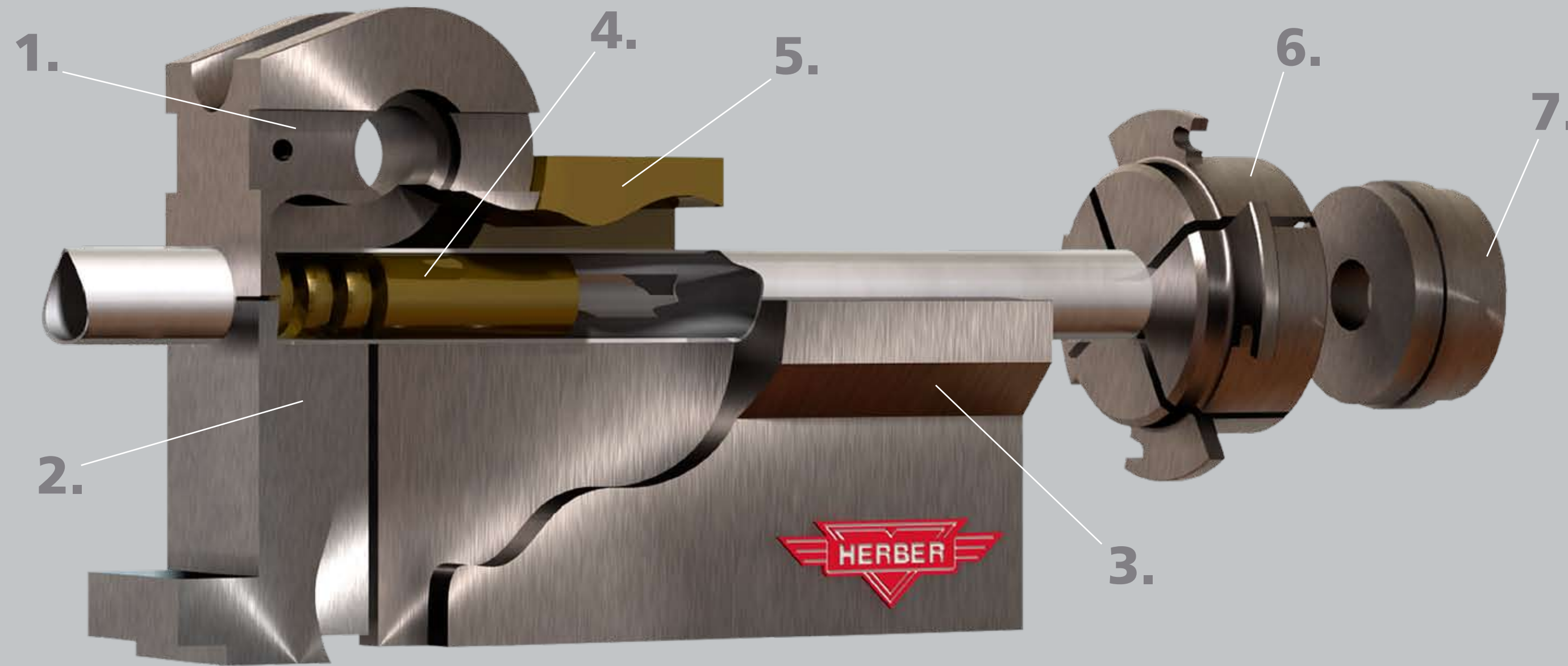
1. Justera stödsko. Öka vinkeln mellan stödsko och rör.
2. Kontrollera dorn storleken.
3. Sätt mer tryck med stödskenan mot röret efter att ha kontrollerat stödskons och dornens placering.
4. Minska hastigheten på stödskenan framåt.
5. Använd mer smörjning eller en bättre kvalitet.
Herber rekommenderar IRMCO, säljs av EQSOL AB.



Låsback Clamp

Deep scratches throughout the bend and in wiper die area

1. Increase rake.
2. Check for undersized mandrel.
3. Increase pressure die force only after checking wiper fit and mandrel location.
4. Reduce force on pressure die advance.
5. Use more and/or a better lube.
Herber recommends IRMCO sold by EQSOL AB.



1. Profilskiva / Bend Die

4. Dorn / Mandrel

7. Rörstopp / Tube Stop

2. Låsback / Clamp Die

5. Stödsko / Wiper Die

3. Stödskena / Pressure Die

6. Chuck / Collet

Grova märke i låsbacksgreppet

1. Kil mellan verktygshalvor utsliten. Byt kil eller justera.
2. Låsbacken är ej parallell med verktyget.



Låsback Clamp

Bad mark at start of bend

1. Removeable clamping portion of bend die not matched properly to round part of bend die.
2. Clamping portion of bend die not parallel to the key way.

Grova rynkor i bocken, glidmärke på rörets klämsträcka

1. Minska trycket på stödskenan.
2. Kontrollera placeringen av dorn och stödsko samt smörjningen.
Herber rekommenderar IRMCO säljs av EQSOL AB.
3. Öka låsbackstrycket.
4. Belägg låsbackarna för bättre grepp typ microsvets, lätttrat eller räfflor.



Låsback Clamp

Heavy wrinkles through bend area only and linear scratches in grip area indicating clamp slippage

1. Reduce pressure die force.
2. Check location (and lube) of mandrel and wiper die.
Herber recommends IRMCO sold by EQSOL AB.
3. Increase pressure on clamp die.
4. Use serrated or carbide spray in tube groove of clamp die.

HERBER ENGINEERING AB

PO Box 203, SE-331 22 Värnamo, Sweden.
Phone: +46 (0)370-69 95 50, Fax +46 (0)370-156 25, info@herber.se
www.herber.se



→ Proportion/förhållande

centreline radius/centrumradie

outside diameter/ytterdiameter

Bending angle/ Biegewinkel	1 x D		1,5 x D		2 x D		2,5 x D		3 x D		5 x D	
	90°	180°	90°	180°	90°	180°	90°	180°	90°	180°	90°	180°
10	S	S	S	S	S	S	S	S	N	S	N	N
20	K	K	K	K	K	K	S	S	S	S	S	S
30	L-2	L-3	L-2	L-3	L-2	L-3	K	L-2	K	L-2	S	S
40	L-3	L-3	L-3	L-3	L-3	L-3	L-3	L-3	L-2	L-3	S	K
50	L-3	L-4	L-3	L-4	L-3	L-4	L-3	L-4	L-3	L-3	K	L-2
60	L-4	L-5	L-4	L-5	L-3	L-4	L-3	L-4	L-3	L-4	L-2	L-3
70	L-4	L-5	L-4	L-5	L-3	L-4	L-3	L-4	L-3	L-4	L-3	L-3
80	L-4	L-5	L-4	L-5	L-3	L-4	L-3	L-4	L-3	L-4	L-4	L-4

A wiper die is recommended when the proportion outside diameter/wall thickness is within the grey field.
Stödsko rekommenderas när proportionen utvändigt diameter/vägg tjocklek ligger inom detgrå fältet.

N = No mandrel/ingen dorn
S = Plug mandrel/standard dorn
K = Ball mandrel/kuldorn
L = Flexible ball mandrel (the figure indicates the recommended number of balls.) /Länkdorn (Siffran anger rekommenderat antal kulor i länkdornen.)

Your No.1 choice in advanced tube forming solutions

SE Vi på Herber har tillverkat maskiner för kallformning sedan 1945. Vårt uppdrag är att leverera lösningar på våra kunders problem. Varje maskin är skräddarsydd för att kunna möta varje specifikt önskemål. Precision i varje detalj är ett av våra nyckelord.

GB We at Herber have been manufacturing cold forming machinery since 1945. Our mission is to deliver solutions to the customer's problem. Every machine is fully customized to the customer's specific requirements. Precision in every detail is one of our key principles.

Herber service & support – www.herber.se

Förebyggande underhåll är nyckeln till säker drift. Men trots ett bra underhåll kan det uppstå produktionsstörningar och då kan vi på Herber hjälpa dig att komma igång igen. Vår serviceorganisation är inte längre bort än ett telefonsamtal. Tack vare elektroniken i våra maskiner kan ni koppla upp er maskin mot oss via modem och internet för mycket snabb felsökning. I de fall det inte räcker med telefonsupport eller korrigeringar via nätet finns våra servicebilar med sitt rullande reservdelslager. Oavsett var ni befinner er kommer vi så snabbt vi kan för att er verksamhet snart ska vara i full drift igen.

Preventive maintenance is the key to safe, secure production. But despite good maintenance operating disruptions could still arise, in which case Herber is there to help you get started again. Our service organisation is just a telephone call away. The electronics in our machines enable a modem link to be set up between your machine and us for rapid fault detection. If telephone support or online rectification is not enough our service vehicles are on call with their mobile stock of spare parts. Wherever you are we will be there as quickly as we can to facilitate a return to full operating capacity.

HERBER ENGINEERING AB

PO Box 203, SE-331 22 Värnamo, Sweden.
Phone: +46 (0)370-69 95 50, Fax +46 (0)370-156 25, info@herber.se
www.herber.se



XXI.0904 SE/GB

Herber Tube Bending Guide

