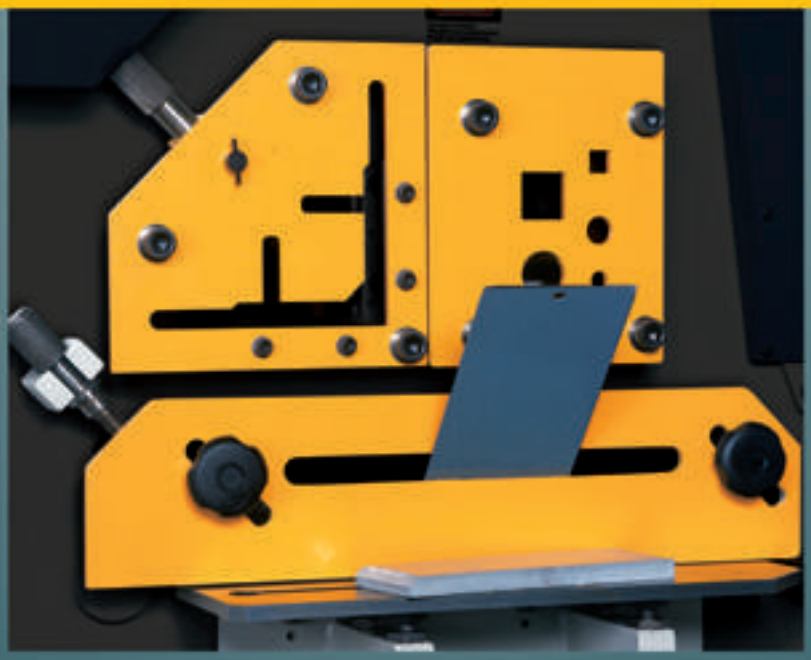
HACO

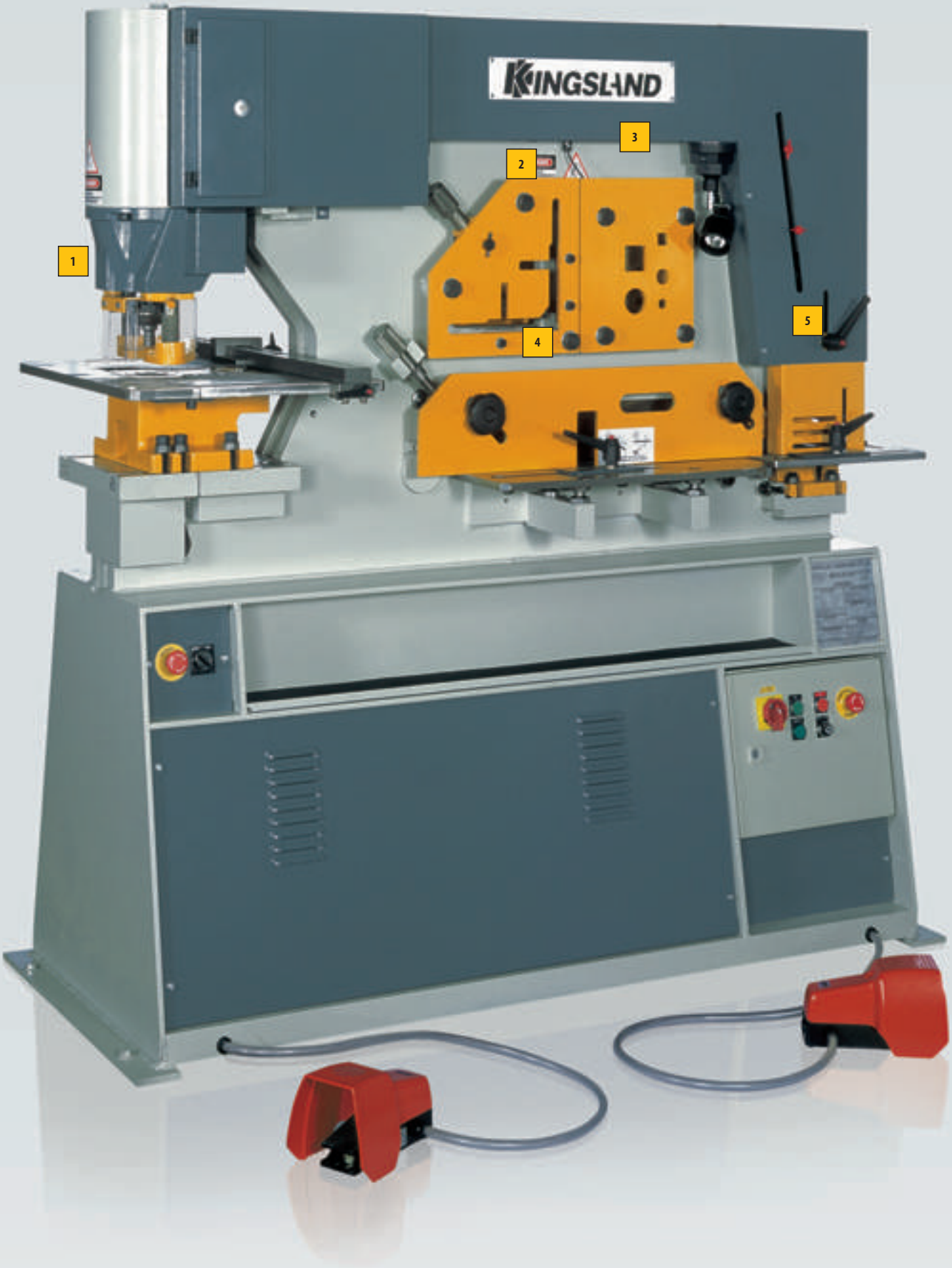
KINGSLAND

for impressive performances

MULTI
HYDRAULIC STEELWORKER



MULTI



Hydraulic steelworker

The Kingsland Multi range of 60 up to 175 ton machines are in the Kingsland tradition of well engineered, robust steelworkers, built for a long working life. These universal machines are supplied with standard tooling including repetition support tables at punch, shear and notch stations and with easily adjusted holddowns at all five work stations to safely control the operations. Comprehensive safety guards are fitted as standard on all work stations. Free standing on a suitable floor, they just require electrical connection to be ready for work. For two operator utilisation, the hydraulic system is activated by two shielded foot controls, one operating the punch end cylinder, the other operating the shear end cylinder.

The shear cylinder provides the power to the three shearing and the notch stations. The system gives accurate power inching at all five work stations and allows the machine to be stopped at any position giving safe and accurate tool setting and work positioning. Limit switches at both ends of the machine control stroke length at all stations. Centralised lubrication is metered by one-shot system, being only one feature of the low maintenance requirement. An optional 'Production Pack' is available to enchance the machine specification, this includes: 1 low volt halogen lamp on a movable magnetic base, 39" long touch and cut ruled length stop, fine adjustment facility to the punch stroke and measuring scales in the notch table.

1 **Punch station**

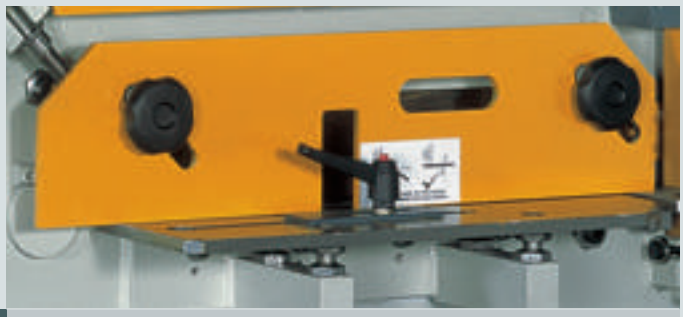
The large punch bed area has a removable front block and is designed to give a very wide range of punching applications. A punch table with rules and guides for repetition work are fitted as standard equipment.

2 **Angle station**

This station provides large capacity angle cutting at 90° and 45°. Angles between 45° and 90° can be achieved by first cutting at 90° and then flange trimming to the required angle in the shearing station.

3 **Section cutting station**

The machines are fitted as standard with blades for cutting round and square bars. With extra equipment, the machines are able to cut, in this aperture, channel, joist, T-section and many other special profiles.



4 **Shearing**

The shearing unit is fitted with a simple robust holddown which is adjustable to any thickness of material within the cutting capacity of the machine. The shear feed table with adjustable guides is fitted to allow accurate feeding of materials. The guide can be adjusted to allow mitre cutting up to 45° for flat bars or to trim the flanges of angle.

5 **Notching station**

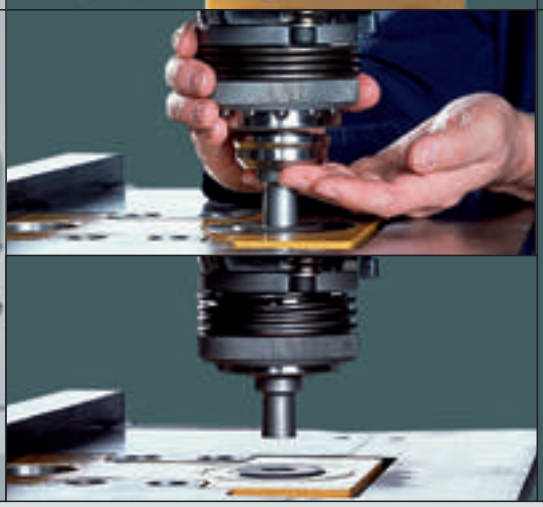
The notching station is fitted as standard with a rectangular notch table with adjustable back stops, allowing repetitive positioning.

Punch station-applications (optional equipment)

Minimum deform stripper assembly
Minimum deform stripper assembly to give minimum deformation while punching close pitch holes in flat bar.

Quick tool change
Quick change punch holder. Only needs to turn the punch holder by 90° to lock in position.

Large hole attachment
Large hole/slot attachment for diameters from 1 1/2" up to 4 3/8". Also available for diameters up to 6 3/8" or 9".



Channel/beam web bolster
Specially designed web bolster for punching in the web of channel or beam. Bolsters for special profiles available on application.

'Super-quick' tool change
Spring and ball bearings lock/un-lock the tool in position with 90° hand turn. No spanners or wrenches required.

Tube notch unit
For 90-degree connection with tubes. Available for outside diameters up to 6 1/2".

Punch station-applications (optional equipment)

Sheet bending unit
Sheet bending unit with multi-vee block (with 3/8", 3/4", 15/16" and 1 1/2" wide V-openings, all 85°).

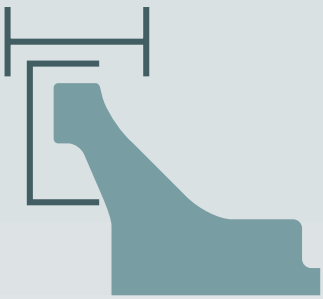
Louvre punch unit
Special punch unit for punching ventilation applications.

Bar bending unit
For bending material up to max. 7/8" thickness.
With single-vee block, 3" with V at 85°.

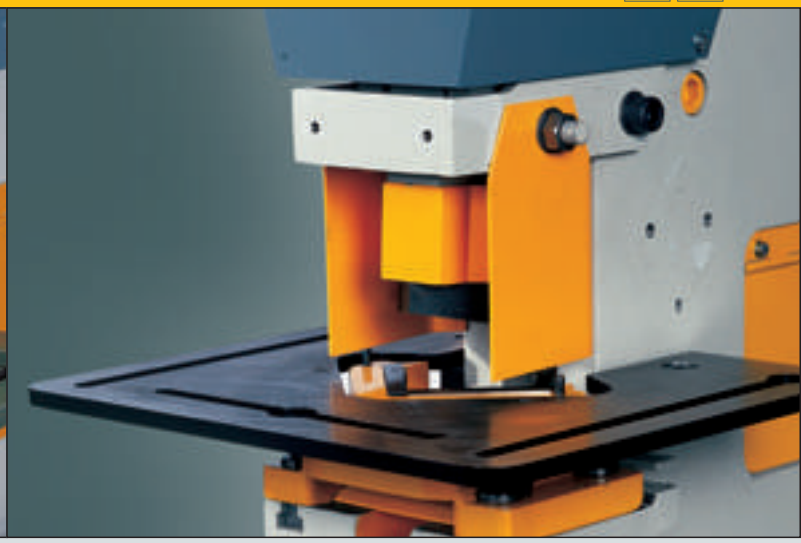
Twin hole unit
Twin hole variable pitch unit. Punches 2 holes up to 1/8" dia.

Swan neck bolster
For web and flange punching up to 1 1/4" dia. in 12" max. channel and 'I'beam.

Touch & cut ruled length stop
The (optional) Touch & Cut ruled length stop (one metre) can be used for the angle-cutting, section-cutting and shear station. 78" or 118" lengths available.



Notching station

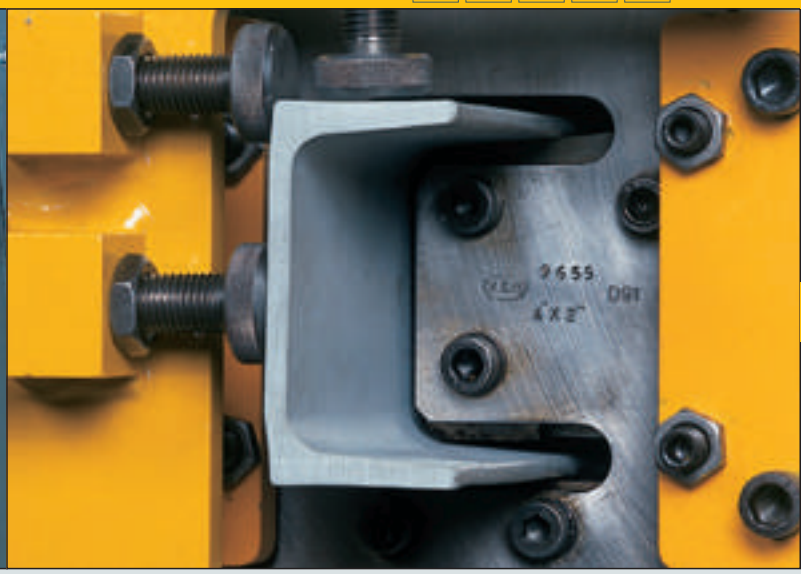


This versatile station can be fitted with a punching station (option) to give double ended punching-throat depth 5".

Rectangular notch unit
The notching station is fitted as standard with a rectangular notch unit and notch table with adjustable back stops allowing repetitive positioning. Extra equipment is available for narrow widths.

90° V-notch (option)
For triangular notching purposes, the standard rectangular notch station can be replaced by a V-notch unit. The V-notch unit is available in various angles up to 90°.

Section cutting station



Standard execution
The machines are fitted as standard with multi-hole blades for cutting round and square bars. With optional equipment, the machines are able to cut channels, joists, Tee-beams and many different profiles. The blades are firmly retained by simple clamps, allowing easy change without the need for eloborate setting.

Blades for cropping channel
Optional solid blades for cropping UPN-profiles. Blades available for many different and special profiles and/or with interchangeable insert blades.

Shearing / angle station

Chamfering application (option)

Specially designed-patented blades and holddown for chamfering applications. With this special equipment it is possible to cut 45° chamfers at the edge of flat plate, thus eliminating the need for special machinery. For welding applications.

Features

- Large punch table with multi-purpose bolster – removable table block for overhang channel / joist flange punching.
- Punch table, shear table and notch table standard equipment.
- Non-tiltable and as thus wear-free angle-cutting blades.
- Power inching and adjustable strokes at punch & shear end.
- Centralised pressure lubrication.
- Wide variety of applications – for large hole punching, crimping, tube notching, bar bending, sheet bending, punch press applications. . .
- Large throat depth at the punching station – extra deep throat models available.
- Mitre cut flanges of angle under shear blade.
- Alternative rectangular / vee notching facility.
- Work station guards standard fitment.
- Two cylinder operation.
- Overload relief on hydraulic system.
- Interchangeable bearings, seals and valves readily available from stockists of hydraulic equipment.
- Machines with very low maintenance requirements.

Standard equipment

- Punch adaptors.
- Swing away punch stripper unit.
- Easy change punch holder.
- Universal die bolster.
- Heavy-duty support tables with guides at shear station and notch station.
- Heavy-duty punch table with guides and backstop.
- Curved shear arm blade with 2 (optional: 4) cutting edges.
- Shear body blade with 4 cutting edges.
- Section arm & body blade with 1 cutting edge.
- Angle cutting arm & body blades with 4 cutting edges.
- Rectangular notch bolster blades with 4 cutting edges.
- Service toolkit.
- Work station guards.
- Instruction, operating and maintenance manual.
- Hydraulic oil fill.

	MULTI 60	MULTI 70	MULTI 80	MULTI 95	MULTI 125	MULTI 140	MULTI 175
Punch and die	Ø 22	Ø 22	Ø 22	Ø 22	Ø 24	Ø 24	Ø 26
Section blades: round	5/8", 1", 1 3/4"	5/8", 1", 1 3/4"	5/8", 1", 1 3/4"	3/4", 1 3/16", 2"	3/4", 1 9/16", 2 1/8"	3/4", 1 9/16", 2 1/8"	3/4", 1", 1 3/16", 1 9/16", 2 1/2"
Section blades: square	3/4", 1 3/4"	3/4", 1 3/4"	3/4", 1 3/4"	1 3/16", 2"	1 3/16", 1 9/16", 2 1/8"	1 3/16", 1 9/16", 2 1/8"	1", 1 9/16", 2 1/8"

KINGSLAND TECHNOLOGY

Technology: linear rail and CNC controlled positioning tables

2 axis CNC-controlled positioning table

Punching of plates, flat steel, in the web of channel and on the flange of channel and I-beams. The punching of the web in channel is effected with the flanges up and by using extended length punches. The table is delivered complete with servo-motor and 2 axis measuring system, and is equipped with an easy to operate Robosoft K210 (or optional M600) control. Especially advantageous is the repeatability accuracy when manufacturing repeat batches and accuracy even for one-offs. The use of labour intensive manual layout is no longer required and possible operator error is eliminated. The workpiece is pushed to the CNC controlled stop, after punching the stop goes to the next position...

The CNC Controlled Positioning Table can be fitted to all Kingsland Steelworkers and Punching machines with 625 mm deep throat.
Working area: - **lateral stop (X-axis):** 39 ½" - **bit stop (Y-axis):** 20" - **positioning accuracy:** ±0.004".

The K210 Controller is very simple and operator friendly to use. Just enter the X and Y-axis co-ordinates and start. There are no G codes to remember, anyone can learn to use this control in minutes. Free DNC software can be supplied with the controller, so that you can connect it to a PC and save and load as many programmes as you want. A post-processor is available so that you have your program automatically after processing a DXF- or DSTO-file. Other files can be post-processed on request.

The optional M600 Controller with a 9" LCD screen, using standard ISO codes, it is possible to carry out linear, square, rectangular, circular and circle arts of any size of opening requested in the punching process. The workpiece with its programmed hole pattern is graphically simulated on the screen. The CNC control ensures the required accuracy within a hole pattern using several gauge lines. Each program with its graphic simulation can be stored on disk (disk memory 720 kB, 3.5" disk drive).

Shown fitted to a 50P.

Gripper assembly detail.

Optional 'drive-in' minimum deform stripper and bolster assemblies.

Linear rail

For all manufacturing divisions of the different structural steel engineering workshops, the CNC controlled Linear Rail is the ideal device for cost effective punching and notching of flat steel, angles, channels, 'T' and 'I' beams. Available with a standard length of 13 ft – giving an operating distance of 11'8" – extendable in 39" lengths to suit the users application. Ideally suited to repetitive and 'one off' work without the need for marking out, greatly increasing production speeds and eliminating costly operator error.

Model KA ▲

The automatic unit is computer controlled by a single axis Type 550 Control, with a digital display and 24 button keypad. With 8 programs, up to 80 steps, that can be programmed in a variety of modes, including: single position, manual operation and position calculation for bar processing applications. Available with an optional heavy duty motor and drive unit.

Clampmaster ▼

2-axis CNC controlled fully automatic table with 2x automatic gripper assemblies
The Clampmaster is a freestanding positioning table for punching plates and flat steel and can be retrofitted to any make of Steelworker or Punching machine. It grips the material, moves it to position and punches all of the programmed holes.

Working area:
- X-axis..... 49".
- Y-axis..... 27 ½".
- Positioning accuracy .....±0.004".

Especially advantageous is the repeatability accuracy when manufacturing repeat batches. Uses the easy to operate Robosoft K210 controller (as described on page 8).

Shown fitted to a Multi 80.

Hydraulic clamping.

KINGSLAND TECHNOLOGY

Triple-head production punching line

Punch 2 types of hole and cut to length - all in one operation. Consists of a CNC Linear Feeder up to 39 ft long (or more if required), with a K210 Controller. A Punching machine with 3 separate punch cylinders and a hydraulic stripper assembly to keep the bar flat. This versatile unit can handle flat bar, angle, channel and I-beams.

TubeMaster, automatic tube punching machine

For fast accurate, distortion free punching of 'any shape' of hole in 'any shape' of tube.
Consists of:

- Kingsland 60P Punching machine with full work area guard and tube punch.
- Automatic positioning unit (M550 Controller, gripper and drive assembly).
- Adjustable mandrel, tube and support block.
- Adjustable table with bottom die block and strippers/guides.
- 2 x 13 ft long conveyors - 11'8" working length (available up to 26 ft long - 24'8" working length), with built-in steel rollers and vertical tube guides.

KINGSLAND

Model specifications

Based on material strength of 28 ton/inch².

		MULTI 60	MULTI 70	MULTI 80	MULTI 95	MULTI 125	MULTI 140	MULTI 175
Punching	maximum capacity	1 1/4 x 1/2	1 x 3/4	1 1/8 x 3/4	1 1/16 x 1	1 3/8 x 1	1 1/2 x 1	1 1/2 x 1 1/4
	diameter x thickness	2 1/4 x 5/16	2 1/4 x 11/32	2 1/4 x 3/8	2 1/4 x 1/2	2 1/4 x 5/8	2 1/4 x 5/8	2 1/4 x 7/8
	stroke length	2 1/8	2 1/8	2 1/8	3 1/8	3 1/8	3 1/8	3 1/8
	standard throat depth	12	12	12	14	14	14	25
	deep throat model	25	25	25	25	25	25	25
	largest hole - std. equipment	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4	2 1/4
	largest hole (optional) (*)	6 3/8	6 3/8	6 3/8	6 3/8	9	9	9
	maximum section	12	12	12	12	12	12	15
	working height	40 1/2	40 1/2	42 5/16	40 5/16	41 1/2	41 1/2	44 5/8
Shearing	flat bar - max. thickness	9 x 3/4	12 x 3/4	12 x 3/4	15 x 3/4	15 x 1	16 x 1	15 x 1 3/16
	flat bar - max. width	14 3/4 x 3/8	14 3/4 x 5/8	18 x 5/8	18 3/4 x 5/8	24 x 5/8	23 x 3/4	24 x 3/4
	angle flange trim - max. 45°	4 x 5/8	4 x 5/8	4 x 5/8	5 x 5/8	5 x 5/8	5 x 5/8	5 x 5/8
	working height	35	35	35	35	35 3/8	35 3/8	35 3/8
Angle cutting	90° cut	5 3/16 x 1/2	5 3/16 x 1/2	6 x 1/2	6 x 5/8	6 x 3/4	6 x 3/4	8 x 3/4
	45° mitre (true int./ext.)	2 3/4 x 3/8	2 3/4 x 3/8	2 3/4 x 3/8	3 x 3/8	3 x 3/8	3 x 3/8	3 x 3/8
	working height	44 1/2	44 1/2	45 1/2	45 1/2	45 5/8	45 5/8	45 5/8
Section cutting	round/square	1 3/4	1 3/4	1 3/4	2	2 1/8	2 1/8	2 1/2 / 2 1/2
	channel/beam (**) (*)	5 3/16 x 2 1/2	5 3/16 x 2 1/2	5 3/16 x 2 1/2	6 x 3 1/2	8 x 4	8 x 4	12 x 5
	Tee (**) (*)	3 1/2 x 1/2	3 1/2 x 1/2	3 1/2 x 1/2	4 x 1/2	5 x 1/2	5 x 1/2	6 x 5/8
Notching	material thickness	3/8	3/8	1/2	1/2	1/2	1/2	5/8
	width - rectangle	1 3/4	1 3/4	1 1/2	2	2 3/8	2 3/8	2 3/8
	depth - rectangle	3 1/2	3 1/2	3 1/2	4	4	4	4
	depth - Vee (*)	2 3/8	2 3/8	2 3/8	2 3/4	3 1/8	3 1/8	3 1/8
	angle flange - max. profile	4 x 3/8	4 x 3/8	4 x 3/8	4 x 1/2	4 x 1/2	4 x 1/2	4 3/8 x 9/16
	working height	35	35	35	35	35 3/8	35 3/8	35 3/8
Corner notch (*)	maximum capacity	10 sq x 5/64	10 sq x 5/64	10 sq x 5/64	10 sq x 5/64	10 sq x 5/64	10 sq x 5/64	10 sq x 5/64
Tube notch (*)	maximum outside diameter	3 1/4	3 1/4	3 1/4	4 1/4	4 1/4	4 1/4	6 1/2
Bending (*)	bar bend. max. capacity	10 x 1/2	10 x 1/2	10 x 5/8	10 x 3/4	10 x 7/8	10 x 7/8	10 x 1
	sheet bend. max. capacity	24 x 1/4	24 x 1/4	24 x 1/4	24 x 1/4	24 x 1/4	28 x 1/8	27 x 1/4
Punching at notch station (*)	throat depth	5	5	5	5	5	5	5
	maximum capacity	1 1/2 x 1/4	1 1/2 x 5/16	1 1/2 x 5/16	1 1/2 x 3/8	1 1/2 x 1/2	1 1/2 x 1/2	1 1/2 x 1/2
Technical data	motorpower (Hp)	7,5	7,5	10	10	10	12,5	15
	net weight - std. throat (lbs)	3,462	3,572	4,245	5,292	6,836	6,968	12,679
	gross weight - std. throat (lbs)	3,737	3,837	4,619	5,821	7,431	7,563	13,164
	machine dim. (L x W x H) (")	65 x 28 x 72	65 x 28 x 72	69 x 28 x 72	75 x 31 x 75	79 x 32 x 80	79 x 32 x 80	106 x 44 x 85
	packed dim. (L x W x H) (")	69 x 34 x 79	69 x 34 x 79	75 x 34 x 79	81 x 37 x 82	79 x 32 x 80	85 x 38 x 87	112 x 50 x 95

Illustrations, dimensions, weights... are not binding as designs are constantly being reviewed.
(*) optional equipment
(**) other profiles are also possible

THE KINGSLAND RANGE OF HYDRAULIC MACHINES

Compact 40

- 4 stations.
- Single cylinder hydraulic steelworker.
- 40 ton capacity.

Compact 60

- 5 stations.
- Single cylinder hydraulic steelworker.
- Available in 45 & 60 ton.

Multi 80

- 5 stations.
- Double cylinder, standard throat.
- Available in 60, 70, 80, 95, 125, 140 & 175 ton.
- Available with deep throat.

Punch 60

- 1 station.
- Single cylinder hydraulic punching machine.
- Available in 60, 70, 80, 95, 125, 140 & 175 ton.
- Deep throat standard.

50P

- 1 station.
- Single cylinder hydraulic punching machine.
- Standard throat depth 11".

125D double punch

- 2 stations.
- Double cylinder, hydraulic punching machine.
- Available in 60, 70, 80, 95, 125, 140 & 175 ton.
- Available with deep throat.

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HACO KINGSLAND

for impressive performances

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