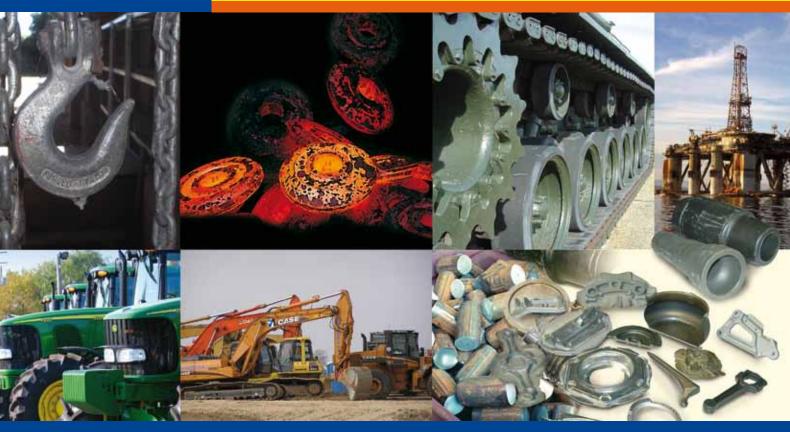
# FOR GING

















since 1930 the successful production of machines and systems for the forging industry

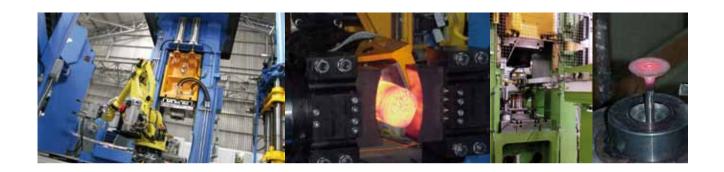














Mechanical cold shears CADDY series

Hydraulic hot shears CTCH series

Electric hot shears CTCV series





High speed disc sawing machines for bars S series

High speed disc sawing machines for pipes SP series





Direct Drive screw presses DD series

Friction screw presses PVS series PVX series

Hydraulic presses HF series HD series





Manipulators RM series

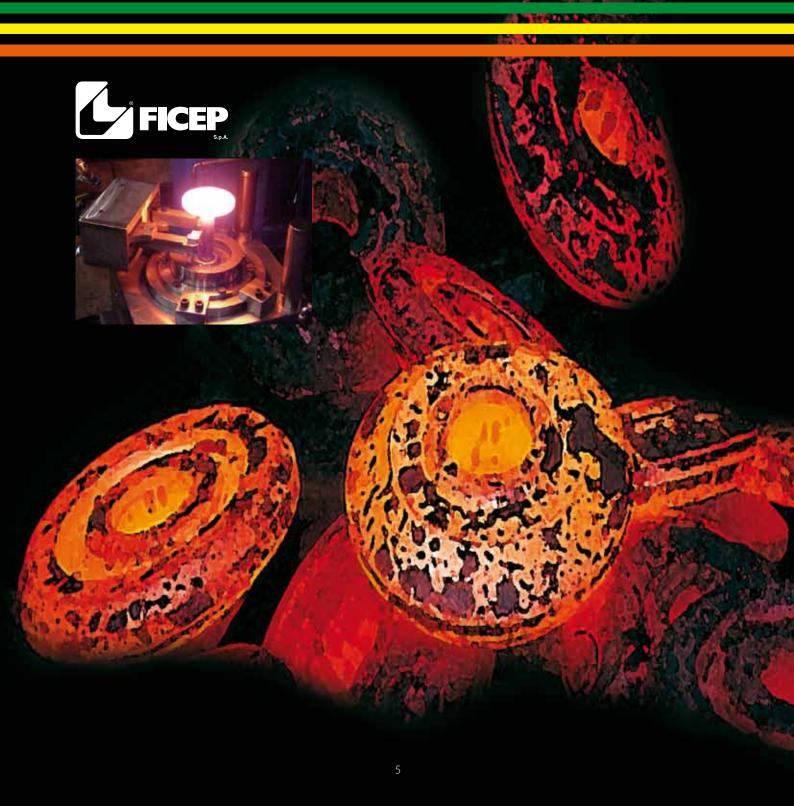
Robots RF series RP series

Complete automated forging lines





Customers all around the world have chosen our high-technology systems in constructing their future



## FORGING







## SYSTEM





#### **FORGING**

HD **PVS / PVX** DD DIRECT DRIVE SCREW PRESSES FRICTION HYDR. PRESSES SCREW PRESSES 

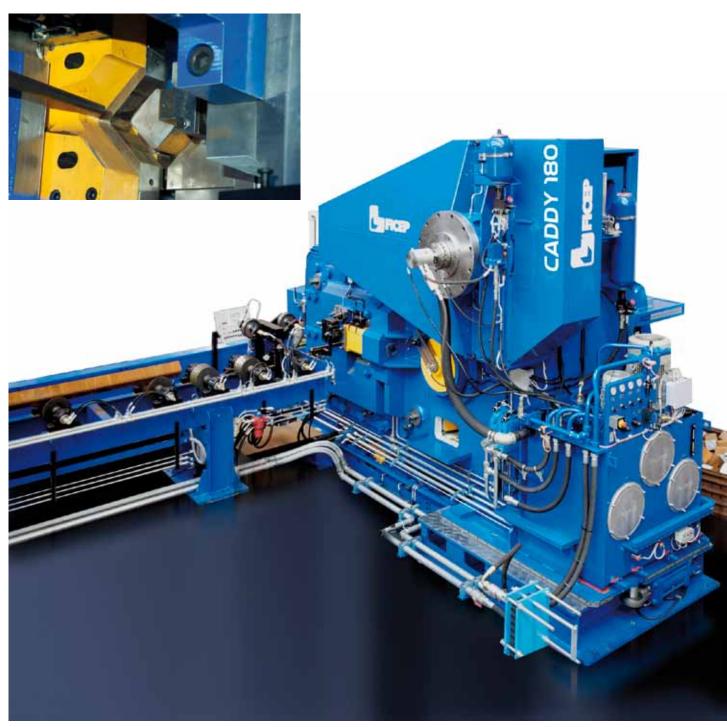
#### **AUTOMATION**

RP

4 AXIS ROBOTS

RM MANIPULATORS	RF 6 AXIS ROBOTS
150	20
250	50
500	70
	165
	210
	350
	600
	900
	1200
	1350









#### **TECHNOLOGY**

The CADDY machines are mechanical shears with horizontal slide, designed to operate in automatic starting from the bar bundle up to the unloading of the slugs. The heart of the billet shear is represented by the shearing area, and Ficep CADDY series can offer unique features:

- horizontal mechanics
- no foundation required
- · rotation on the longitudinal angle
- high productivity
- noiselessness

#### Option accessories:

- automatic weighing system and selection of the slugs in weight classes
- laser control of the bars' dimensional tolerances before the shearing operation
- bars' pre-heating to allow the shearing of critical materials without cracks.

## **MECHANICAL COLD and WARM SHEARS**

## **CADDY**SERIES







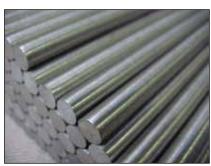


MODEL CADD	Y	28	50	52	56	63	70	80	90	100	140	160	180
Cutting Force	kN	320	900	900	1400	2200	3000	4400	5000	5600	8000	11500	14000
Number of Cuts per minute *	max. n-1	80**	64	85**	78	70	70	63	63	56	38	33	33
Round	max. mm	32	50	52	56	63	70	80	90	100	140	160	180
Square	max. mm	-	-	-	50	55	65	75	85	100	135	160	180
Measuring Length	mm	0/500	0/500	0/500	0/500	0/500	0/500	0/500	0/500	0/500	0/500	0/500	0/500
Bar Length	max. m	6	6	6	6	6	6	6	6	6	6	6	6
Loading Table Capacity	ton	1,5	4	4	4	5	5	8	8	8	8	8	8
Clutch and Brake type	-	PNEUM.	PNEUM.	HYDR.									
Installed Power	kW	8	16	20	36	50	60	70	90	120	160	200	250
Main Motors Power	kW	5,5	11	15	22	30	37	45	55	75	110	160	200
Shear Weight	kg	1500	2800	3700	6350	7350	9500	16800	27000	24000	33000	50000	65000

<sup>\*</sup> Continuous cut without inverter for certain dimensions of the piece

<sup>\*\*</sup> with inverter















## **CADDY**SERIES



Thanks to the possibility of cutting any type of material, the CADDY billet shears are ahead of the forging processes in the widest possible application fields.

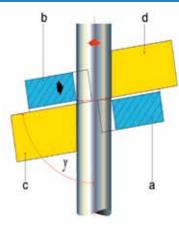
The customers who require perfect slugs in weight and measure cannot do without the CADDY machines.

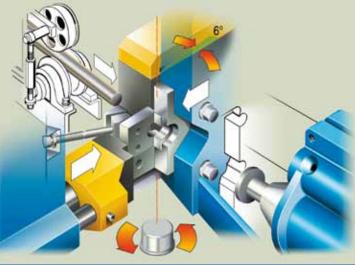
Among the industries that have always been using billet shears we can find:

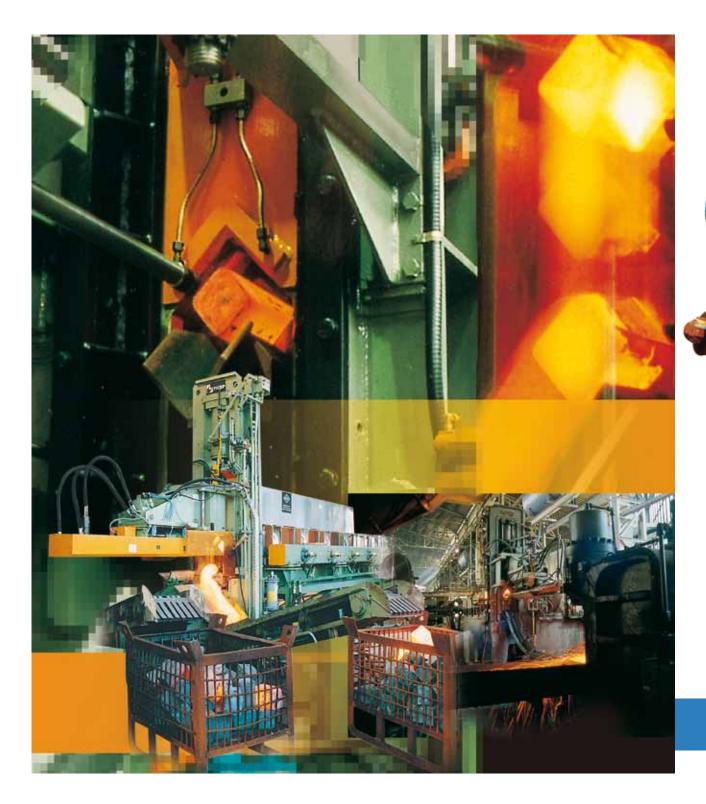
- Automotive industry: valves, motor shafts, gears, pedal cranks, connecting rods;
- Motor transports: hooks, crank shafts, axle shafts, flanges, etc.;
- Tools: spanners and working instruments;
- Oil industry: flanges for pipelines, tube flanges;
- Bearings: roll and ball bearings;
- Hardware: locks, elements for wrought iron, bolts and nuts;
- Agriculture: spades, plows, hoes, shovels, blades, scythes, harrows;
- Houseware: cutlery, pots;
- Aerospace: vanes, turbine blades;
- Horology: watchcases;
- Railway: screw spikes, track bolts, axle guide braces;
- Earth movement: track links, rolls, points for excavators:
- Energy: distribution groups, gas valves;
- Armaments: bullets, tracks;
- Mechanics in general.

#### **ROTATION**

The shear can rotate to allow an oriented angle of the blades which, together with the rake, ensures the achievement of perfect shearing surfaces.







MODEL CTCH		70	100	140	180	250	300
Mobile Blade max. Stroke	mm	140	190	270	330	480	580
Max. Cutting Length (opt)	gth (opt) mm		400 400 400 500 500 (500) (500) (500) (700) (700-1000-1200)		500 (700-1000-1200)	500 (700-1000-1200)	
Installed Power kW		30	50	64	100	150	160
Shear + hyd. unit Weight	kg	1800	3200	6000	8000	17000	19000
Round (min / max Ø1150°C) mm		30 / 70	40 / 100	50 / 140	80 / 180	100 / 250	100 / 300
Square (min / max Ø1150°C)	mm	30 / 60	40 / 100	50 / 140	80 / 180	100 / 250	100 / 250



## HYDRAULIC HOT SHEARS

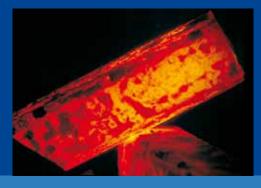
### CTCH SERIES



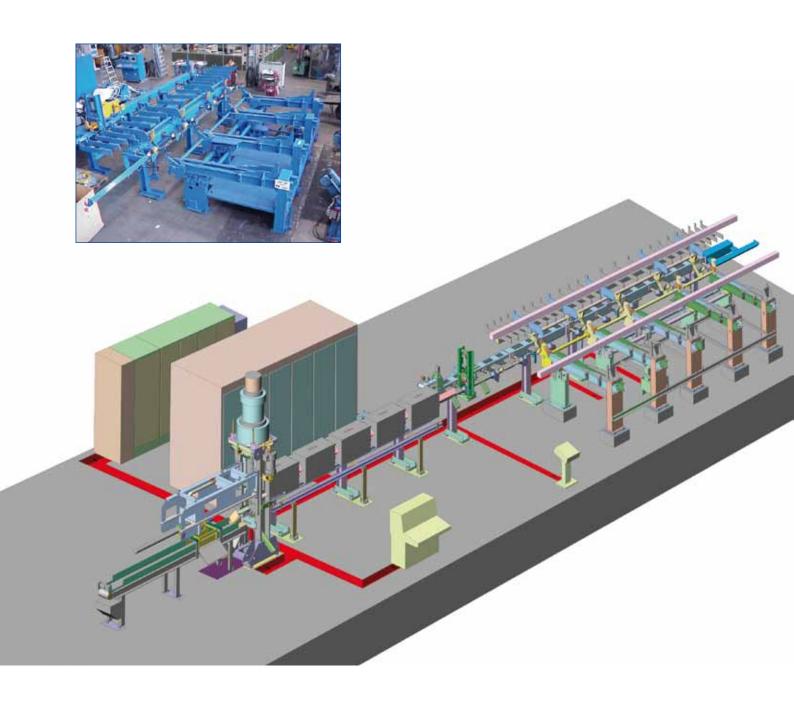
The hot shears of the "CTCH" series are able to heat and cut the bars in one only operation for immediate press feeding.

These machines ensure the best return on investment because of:

- Possibility to shear steels that cannot be cold sheared;
- Reduction of the material flow inside the factory;
- Reduction of the material cost;
- Reduction of the forging scrap;
- Reduction of the heating cost;
- Reduction of the costs for the personnel involved.

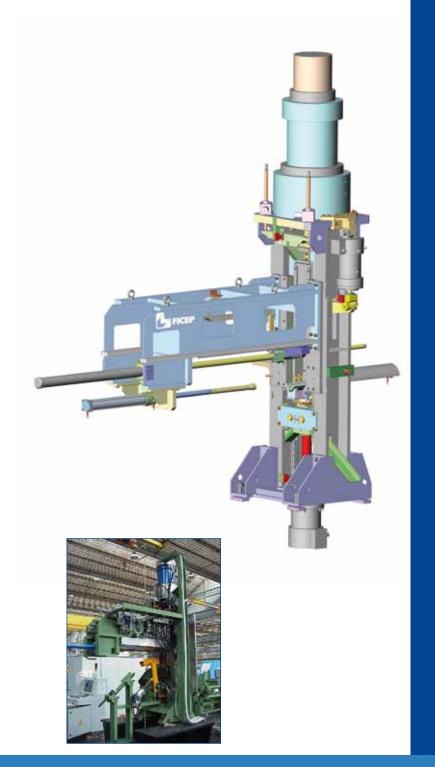








MODEL CTCV		100	140
Mobile Blade max. Stroke	mm	190	270
Max. Cutting Length (opt)	mm	400 (500)	400 (500)
Average Absorbed Motors Power	kW	50	64
Shear Weight	kg	3200	6000
Round (min / max Ø1150°C)	mm	40 / 100	50 / 140
Square (min / max Ø1150°C)	mm	40 / 100	50 / 140



### ELECTRIC HOT SHEARS

### CTCV SERIES



New range of high performance hot shearing systems, completely electric. The main 4 axes are driven by new developed electro-mechanic actuators: blade, hold down, square cutting attachment and length gauge.

The main advantages are:

- Reduction of the cycle time with possibility of coupling with the fast and modern transfer presses.
- Modulation of the blade speed during the shearing process allowing an improvement of the shearing quality, especially on "difficult" steels.
- Absence of hydraulic oil and therefore no fire risk caused by leaks.
- Higher efficiency compared to the traditional hydraulic drives.











## HIGH SPEED DISC SAWING MACHINES

S SERIES



Ficep, with more than 80 years of experience in the manufacture of billet shears and CNC shearing systems is presenting a new range of high performance disc sawing machines fitted with 'carbide tipped' blades. These new sawing lines overcome all the limitations of the traditional disc or band saw and increase productivity output thanks to their exceptional performance in terms of speed, accuracy, sawing quality and allowing a reduction in scrap production. This also results in a sizeable reduction of cutting costs!

MODEL S		S35	S 50	S 56	S 80	S 90	S 110	S 200	S220
Disc Diameter	mm	360*	460* / 500	460*/ 500 / 520 / 560	780* / 800	800 / 900	1120	1750 / 2000	2000/2200
Insert Thickness	mm	2,5*	2,7* / 3,4	2,7* / 3,4	4*/ 4 - 7	4-7	4,2 - 8	12 - 14	12 - 14
Round	mm	30 - 110	40 - 130*/150	40 - 130*/150/160/180	60 - 220*/230	60 - 230/280	80 - 350	200 - 475 / 600	200 - 600 / 800
Square	mm	30 - 100	40 - 120*/140	40 - 120*/140/145/165	60 - 205*/215	60 - 215/260	80 - 320	N.A.	N.A.
Std Cutting Length	mm	5 - 500	5 - 500	5 - 500	5 - 500	5 - 500	5 - 500	5 - 1000	5 - 1000
Opt Cutting Length	mm	1000/ 1500/2000	1000/ 1500/2000	1000/ 1500/2000	1000/ 1500/2000	1000/ 1500/2000	1000/ 1500/2000	1500/2000	1500/2000
Std Bar Length	m	3 - 6	3 - 6	3 - 6	3 - 6	3 - 6	3 - 6	3 - 6	3 - 6
Std Capacity	tons	6	6	10	15	20	25	15**	25**
Std		•	•	• / ■	• /	• / ■	• /	•	•
Opt		• / ■	• / ■	X	Х	Х	Х	Х	Х
Installed Power	kW	27	36	39	55	58	90	224	230
(*) TA-Throw-away	blades	- (**) Rollerway	only						



Unloading and palletising systems of the slugs









### S SERIES



#### **EXTRAORDINARY EFFICIENCY**

#### PRODUCTIVITY:

bars with diam. 50 mm and length 100 mm = 400 pcs/h

#### SCRAP:

bars up to diam. 130 mm = 2,7 mm

#### **COST PER CUT:**

50% less than the cost using re-ground blades

#### **CUTTING QUALITY:**

perfectly parallel, flatness, roughness and absence of flash

#### SET-UP:

simple and fast.













## HIGH SPEED DISC SAWING MACHINES

### S Pipes SERIES



Automatic disc sawing lines with "carbide tipped" blades, specifically meant for the sawing of pipes

This range of high performance sawing machines is characterized by an extremely sturdy construction with high structural stiffness.

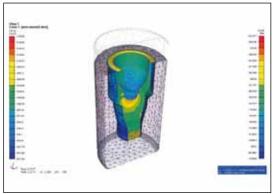
The life of the blade and the sawing quality are ensured by the automatic modulation of the cutting parameters during the working cycle; in particular, this implies the execution of the dynamic adjustments of the blade rotation speed and of the head feed during the entry/exit phase in the pipe, where the metal section engaged by the blade is larger compared to the central part whose thickness is minimum, thus reducing also the cycle time

Furthermore, these sawing machines are fitted with a special blade guiding system with 3 couples of high resistance steel sliding blocks with air operated support, which reduce to a minimum the vibrations produced during the working cycle and ensure a high quality of the sawn piece.

MODEL S PIPE		S 56 P	S 80 P	S 90 P	S 110 P	S 140 P
Disc Diameter	mm	460*/ 500 / 520 / 560	780* / 800	800 / 900	1120	1120 / 1300
Insert Thickness	mm	2,7* / 3,4	4*/ 4-7	4-7	4,2-8	4,2-10
External Diameter	mm	40 - 130*/150/160/180	60 - 220* / 230	60 - 230 / 280	80 - 350	100 - 350 / 420
Thickness Pipe / ED	%	> 5%	> 3%	> 3%	> 3%	> 3%
Std Cutting Length	mm	5 - 500	5 - 500	5 - 500	5 - 500	5 - 500
Opt Cutting Length	mm	1000/1500/2000	1000/1500/2000	1000/1500/2000	1000/1500/2000	1000/1500/2000
Std Pipe Length	m	3 - 6	3 - 6	3 - 6	3 - 6	3 - 6
Std Capacity	tons	10	15	20	25	25
Installed Power	kW	39	55	58	90	96
(*) TA-Throw-away blade	s					









MODEL		HF250	HF400	HF630	HF800					
Rated Force Downstroke	kN	2500	4000	6300	8000					
Rated Force Upstroke	kN	150	240	378	480					
Max Working Pressure	bar	315	315	315	315					
Max Working Speed max Force	mm/s	60	60	60	60					
Max Working Speed half Force	mm/s	120	120	120	120					
Translating Speed	mm/s	400	400	400	400					
Ram Stroke	mm	500	500	650	650					
Vertical Total Clearance	mm	1000	1000	1250	1250					
Horizontal Clearance	mm	900	900	1000	1000					
Die Holder Plate Width	mm	800	800	1000	1100					
Die Holder Plate Length	mm	800	800	1000	1100					
Installed Power	kW	110	160	2 x 130	2 x 160					
Weight	ton	15	20	25	50					
All types of presses can be supplied with extended stroke										





#### **HYDRAULIC PRESSES**

### **HF** SERIES



The hydraulic press HF series is particularly suitable for preforming and trimming of hot forged steel parts.

The monolithic structure made of steel, produced in heavy carpentry and properly dimensioned with high stiffness, is suitable to absorb all the typical deformations and extensions of the forging industry. The ram, guided with bronze shoes along its entire length, guarantees a high precision and a good perpendicularity of the die baseplate in very tough working conditions.

The hydraulic power pack placed over the press, besides reducing considerably the overall dimensions, allows a very high approach and process speed reducing the contact time between the workpiece and the dies, thus increasing the life of the dies.

The press is equipped with very large side windows that facilitate loading and unloading operations of the machine even sideways.

Thanks to the 2 lateral cylinders, the approach and lifting speed of the ram is very fast, thus reducing the working cycle time and energy consumption. This very versatile press can be equipped with special accessories, such as the upper mobile die holder, allowing the realization of complex forged parts.

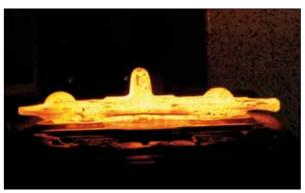












MODEL		HD1000	HD1250	HD1600	HD2200	HD4000									
Rated Force Downstroke	kN	10000	12500	16000	22000	40000									
Rated Force Upstroke	kN	600	750	960	1200	2400									
Max Working Pressure	bar	315	315	315	315	315									
Max Working Speed max Force	mm/s	60	60	60	60	60									
Max Working Speed half Force	mm/s	120	120	120	120	120									
Translating Speed	mm/s	400	400	400	400	400									
Ram Stroke	mm	500	550	650	650	800									
Vertical Total Clearance	mm	1415	1650	1650	1850	2000									
Horizontal Clearance	mm	1000	1250	1250	1250	1600									
Die Holder Plate Width	mm	850	920	1100	1100	1500									
Die Holder Plate Length	mm	850	1000	1100	1100	1500									
Installed Power	kW	2 x 200	3 x 160	3 x 200	4 x 200	1600									
Weight	ton	50	75	90	100	200									
All types of presses can	be supplied	d with extended s	troke			All types of presses can be supplied with extended stroke									



#### **HYDRAULIC PRESSES**

### **HD** SERIES



The new HD series hydraulic press is designed for pressing and hot extrusion of details that require a high binding transformation energy.

The structure consists of a base and a cylinder head made in casting and, thanks to the columns preloaded with tie rods, provides high axial stiffness. The result is a constant transformation with a high quality of the forged part.

The long ram, led by bronze guides along its entire length, ensures high accuracy and perpendicularity of the die baseplate in very tough working conditions.

The hydraulic power pack placed over the press, besides reducing considerably the overall dimensions, allows very high approach and work speed reducing the contact time between the workpiece and the dies, thus increasing the life of the dies.

The use of 2 lateral cylinders allows the ram to make quick approach movements and rapid rise with a consequent reduction of work and energy consumption during the cycle time.

This very versatile press can be equipped with special accessories, such as the upper mobile die holder, allowing the realization of complex forged parts.















MODEL PVS / PV	ΥX	160	180	200	230	280	300	350	370	410
Screw Diameter	mm	160	180	200	230	280	300	350	368	410
Nominal Force	kN	2700	3250	4200	5300	8000	10000	13500	13700	16000
Max. Continuous Force	kN	4350	5200	6700	8500	12800	16000	21600	22000	25600
Max. Allowed Force	kN	5400	6500	8400	10600	16000	20000	27000	27400	32000
Gross Energy	kJ	17	26	40	54	105	135	200	220	280
Ram Stroke	mm	300	350	400	425	475	500	550	550	550
Strokes per min.	n°	45/50	35/42	30/35	25/32	22/28	22/28	20/24	18/22	16/20
Vertical Clearance	mm	400	400	500	600	700	640	720	1100	1200
Horizontal Clearance	mm	370	500	575	600	700	700	760	900	1100
Installed Power	kW	20	30	37	45	75	55	75	90	110
Weight	ton	7	14	17	22	41	40	55	80	120







### FRICTION SCREW PRESSES

## PVS and PVX SERIES

The high flexibility of the FICEP friction screw presses gives it a wide range of uses for different shapes and sizes of parts thus resulting in technical and economical optimization in the hot forging of steel, brass and aluminium and in coining.

The friction screw presses incorporate all the advantages of the drop hammers and of the eccentric presses but they do not have their deficiencies and limitations.

In fact:

With all the energy and shock of the screw press confined in its closed ring frame, the foundation requirements are minimum, no shock is transferred to the floor and the noise is very low.

The screw press is basically very simple with few moving parts. This simplicity translates into sturdiness, high throughput rates and corresponding low maintenance costs.

The absence of a bottom dead centre eliminates the possibility of sticking the press when the material is oversized, too cold or misplaced. This does also enable a sequence of several blows on the same part.

Energy levels can be preset easily and precisely thus optimizing energy consumption and production regardless of the skill of the operator.

High energy levels available for each blow result in a smaller screw press doing the same work of a much larger eccentric press (1.3 to 1.6 times larger eccentric press is required).

Pieces forged in one or two blows under a screw press require at least 7 to 8 blows under a hammer. This also means a reduced wear of the dies.

The screw press can be easily integrated in fully automated forging systems.









MODEL DD		40	50	68	85	110	140	190	270	400	560	750	1100	1600
Screw Diameter	mm	230	255	280	305	330	368	410	455	510	560	630	710	800
Nominal Force	kN	5300	6500	8000	9300	10900	13600	16900	20700	26000	31500	40000	50410	64000
Max. Continuous Force	kN	8500	10400	12800	14900	17500	21800	27000	33200	41600	50400	64000	80656	102400
Max. Allowed Force	kN	10600	13000	16000	18600	21800	27200	33800	41400	52000	63000	80000	100820	128000
Gross Energy	kJ	60	80	108	154	177	240	331	445	652	860	1230	1700	2500
Ram Stroke	mm	450	475	475	500	500	550	650	700	800	900	1000	1100	1250
Strokes per min.	n°	26/38	22/31	21/30	20/28	18/15	16/23	13/19	11/16	10/15	9/13	8/11	7/10	6/9
Vertical Clearance	mm	650	750	750	915	1100	1100	1200	1250	1400	1500	1700	1800	1800
Horizontal Clearance	mm	650	750	750	1000	1050	1100	1250	1250	1400	1500	1600	1800	2000
Average Absorbed Power	kW	60	95	86	108	115	140	163	208	260	294	374	482	555
Weight	ton	25	30	35	50	60	75	100	135	190	250	350	450	650
All types of presses can be supplied with extended stroke														











### DIRECT DRIVE SCREW PRESSES

### **DD** SERIES

The "DIRECT DRIVE" screw press proposed by FICEP beside the standard presses with disc control, is characterized by important technical and economical innovations which place this machine ahead of the market.

#### **ROTATING LINEAR MOTOR**

This operation develops the concept of the Brushless linear motor, with the permanent magnets applied directly on the flywheel (rotor) and the stators fixed on the press frame. This solution, besides being very simple from a constructive point of view, makes the motor-flywheel group extremely insensitive to the vibrations and to the strong decelerations it is subjected to for the type of operation that the press is required to carry out. Furthermore, the high efficiency and the considerable dynamic performances typical of the linear motor allow the achievement of the following results:

- Higher impact speed and therefore reduced wearing of the dies;
- Higher energy availability, completely achievable even at three quarters of the ram stroke;
- Considerable reduction of the cycle time, thus involving a higher productivity;
- Possibility to program the energy with absolute accuracy and repeatibility, both for the single stroke and for the multiple strokes with different energy values;
- Extremely reduced maintenance;
- Extremely high efficiency that allow an electric energy saving over 50%.

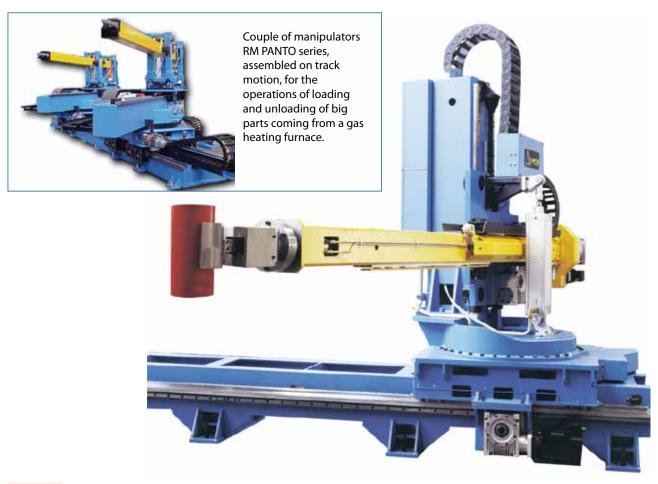


#### **UTILIZATION FIELDS**

- Railway 🛌
- Aeronautical
- Energy transfer
- Petrochemical
- Transports
- Medical
- Houseware

for ferrous and non ferrous metals (aluminium, titanium, inconel, etc.)







MODEL RM		RM 150	RM 250	RM 500
Net Loading Capacity	kg	150	250	500
Min / Max Dia with unilateral pincher	mm	120 / 220	160 / 250	200 / 300
Min / Max Dia with self-centerig pincher	mm	170 / 500	200 / 700	300 / 900
Max Piece Length	mm	500	700	800
Horizontal Stroke (programmable)	mm	2500	2500	2000
Horizontal Speed (programmable)	mm/s	1400	1200	1000
Vertical Stroke (programmable)	mm	500	500	500
Rotating Base Angle	۰	270	270	270



### MANIPULATORS AND ROBOTS

### **RM-RF-RP**



The manipulators RM series and the robots RF-RP series belong to FICEP's system for the handling of slugs and forged parts both in a hot and in a cold state.

They can meet any handling requirement during all stages of the forging cycle.

With our world wide experience we are ready to realize every special customer application.





MODEL		RF 20	RF 50	RF 70	RF 165	RF 210	RF 350	RF 600	RF 900	RF 1200	RF 1350	RP 160	RP 300	RP 450	RP 700
Net Loading Capacity	kg	20	50	70	165	210	350	600	900	1200	1350	160	300	450	700
Axis	No	6	6	6	6	6	6	6	6	6	6	4	4	4	4
Repeatability	mm	± 0,08	± 0,07	± 0,07	± 0,2	± 0,3	± 0,3	± 0,3	± 0,5	± 0,3	± 0,3	± 0,5	± 0,5	± 0,5	± 0,5
Operational Radius	mm	1811	2050	2050	2655	2650	2650	2832	4683	3734	3734	3143	3143	3130	3143
Weight	kg	250	560	560	1170	1240	1720	2800	9600	8600	8600	1940	1940	2430	2700





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