

# PRESSES



**OP 2M Series**



**OP 2MI Series**



**OP P Series**



**Tromboline  
MOP Series**

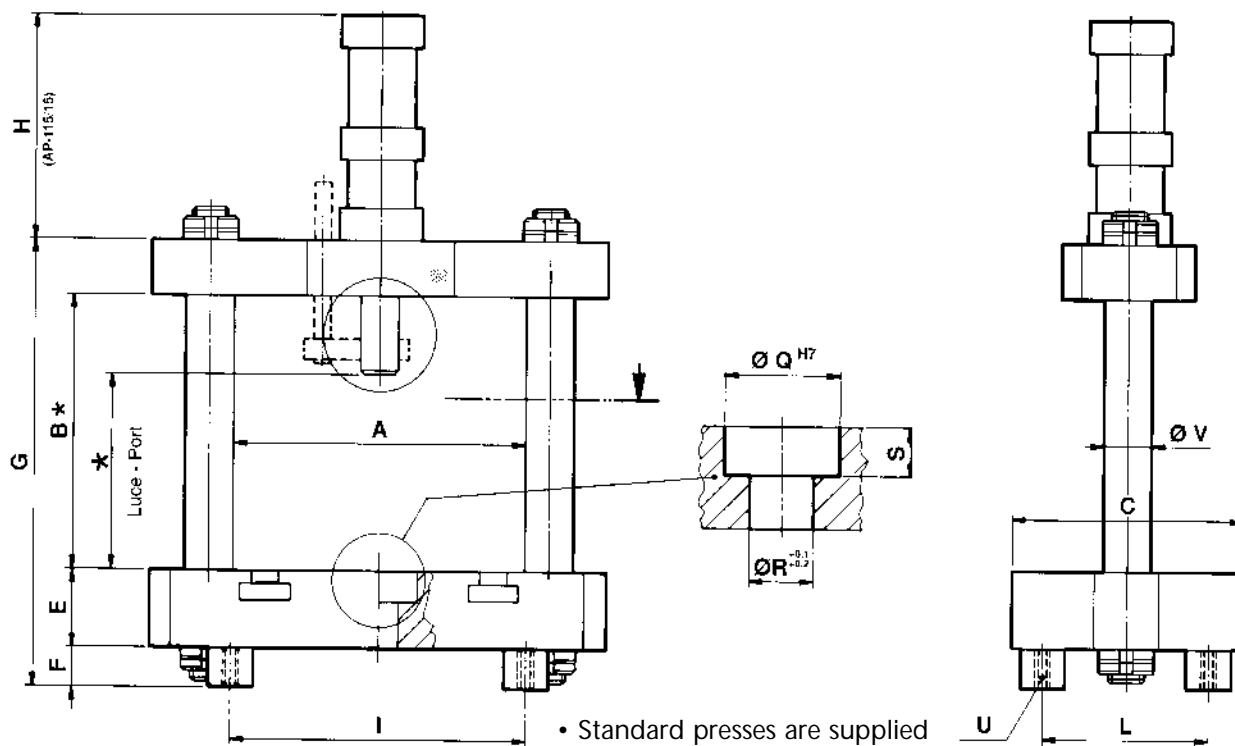
See Page 41

## PRESS FORCE CHART

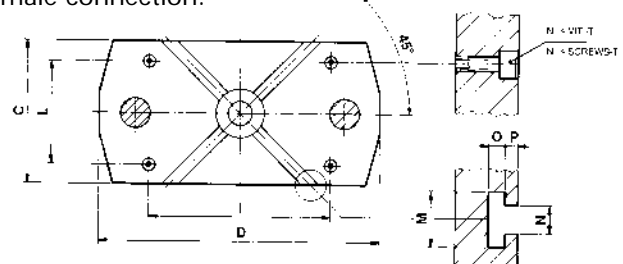
	Part Number	OP 1	OP 3	OP 5	OP 8	OP 13	OP 21	OP 42
Power stroke	lbs @ 100 psi	3,675	7,476	13,305	20,705	33,959	53,093	106,185
	kg @ 7 bar	1,692	3,442	6,125	9,532	15,633	24,442	48,883
Power stroke	lbs/psi	36.7	74.8	133.0	207.0	339.6	530.9	1,061.9
	kg/bar	241.7	491.7	875.0	1,361.7	2,233.3	3,491.7	6,983.3
Approach stroke	lbs @ 100 psi	411	699	1,085	1,756	2,803	4,521	4,521
	kg @ 7 bar	189	322	499	809	1,290	2,081	2,081
Retract stroke	lbs @ 100 psi	322	530	684	1,021	1,685	3,404	3,404
	kg @ 7 bar	148	244	315	470	776	1,567	1,567

This chart can be used for all Press series OP, OP P, OP 2MI





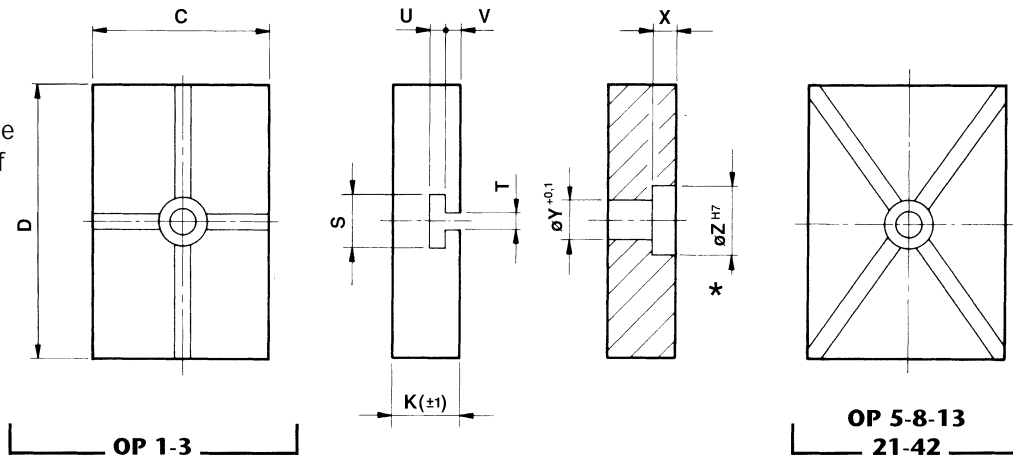
Series	OP 1	OP 3	OP 5	OP 8	OP 13	OP 21	OP 42
A	285	380	420	440	470	470	530
B	120	150	160	180	200	200	230
C	200	250	280	300	350	350	400
D	300	350	400	450	500	500	600
E	200	260	270	315	385	385	525
F	410	480	520	590	650	700	790
G	500	670	720	770	860	860	1,060
H	620	855	910	1,000	1,150	1,150	1,505
I	560	520	630	650	680	710	850
L	1,180	1,375	1,540	1,650	1,830	1,860	2,355
S	18	21	21	21	28	28	28
T	10	12	12	12	16	16	16
U	8	9	9	9	12	12	12
V	7	8	8	8	10	10	10
Z	60	70	70	90	110	110	110
Y	45	50	50	60	70	70	70
K	31	36	46	56	75	75	75
X	16	18	18	18	25	25	25



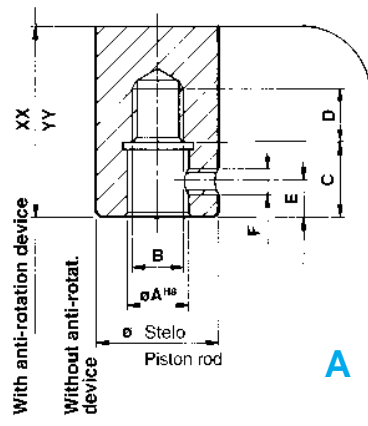
Series	Weight kg	Shipping dimensions cm	Feed Hose Ø
OP-1	125	130x55x60	12
OP-3	230	170x65x85	17
OP-5	320	170x65x85	17
OP-8	450	180x70x90	17
OP-13	720	200x85x100	17
OP-21	830	200x85x100	17
OP-42	1,050	240x100x120	24

## Bolster Plate

\* Central hole of bolster plate is not concentric with axis of piston rod

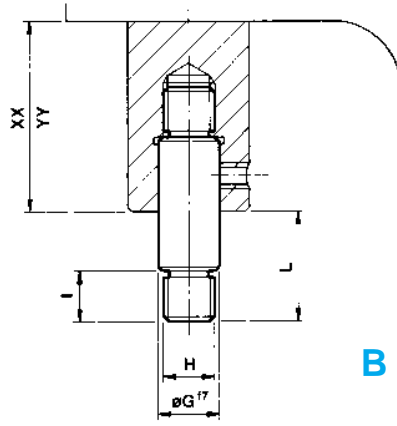


PISTON ROD WITH FEMALE CONNECTION



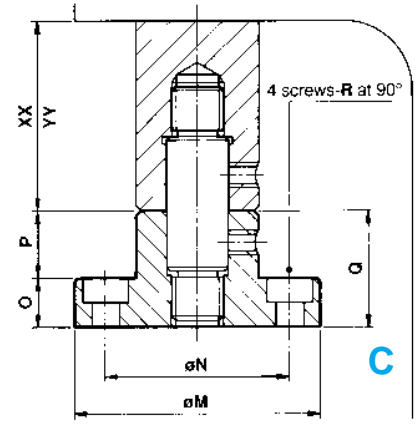
**A**

PISTON ROD WITH MALE CONNECTION



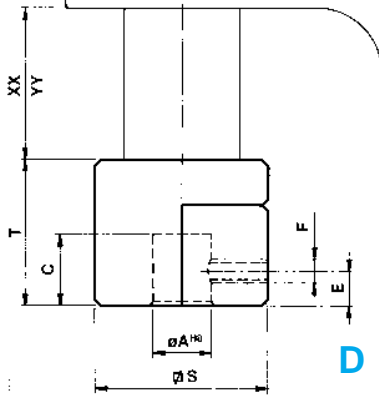
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PISTON ROD WITH DIE HOLDER PAD



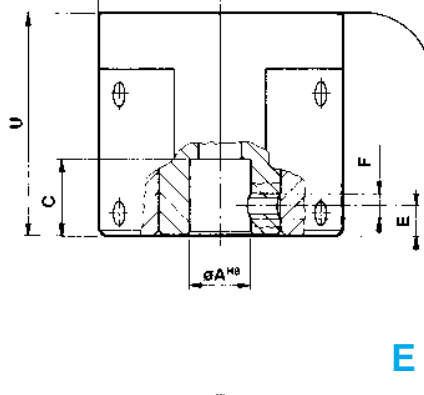
**C**

RADIAL DIE HOLDER PAD



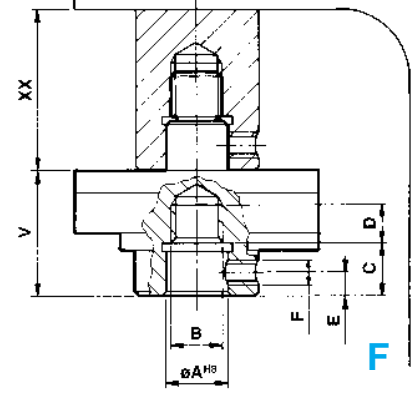
**D**

WITH RAM GROUP



**E**

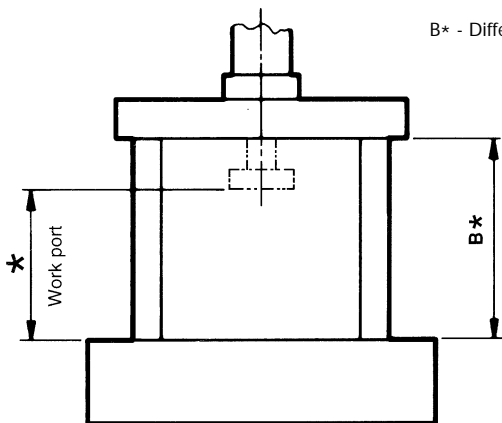
WITH LOAD CELL



**F**

Series	OP 1	OP 3	OP 5	OP 8	OP 13	OP 21	OP 42
A	16	20	25	25	30	30	30
B	M12x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2	M27x2	M27x2
C	18	22	28	28	35	35	35
D	12	16	20	20	27	27	30
E	8	10	12	12	15	15	15
F	M6	M8	M8	M8	M8	M8	M8
G	16	20	25	25	30	30	30
H	M12x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2	M27x2	M27x2
I	12	16	20	20	27	27	27
L	23	33	38	38	52	52	52

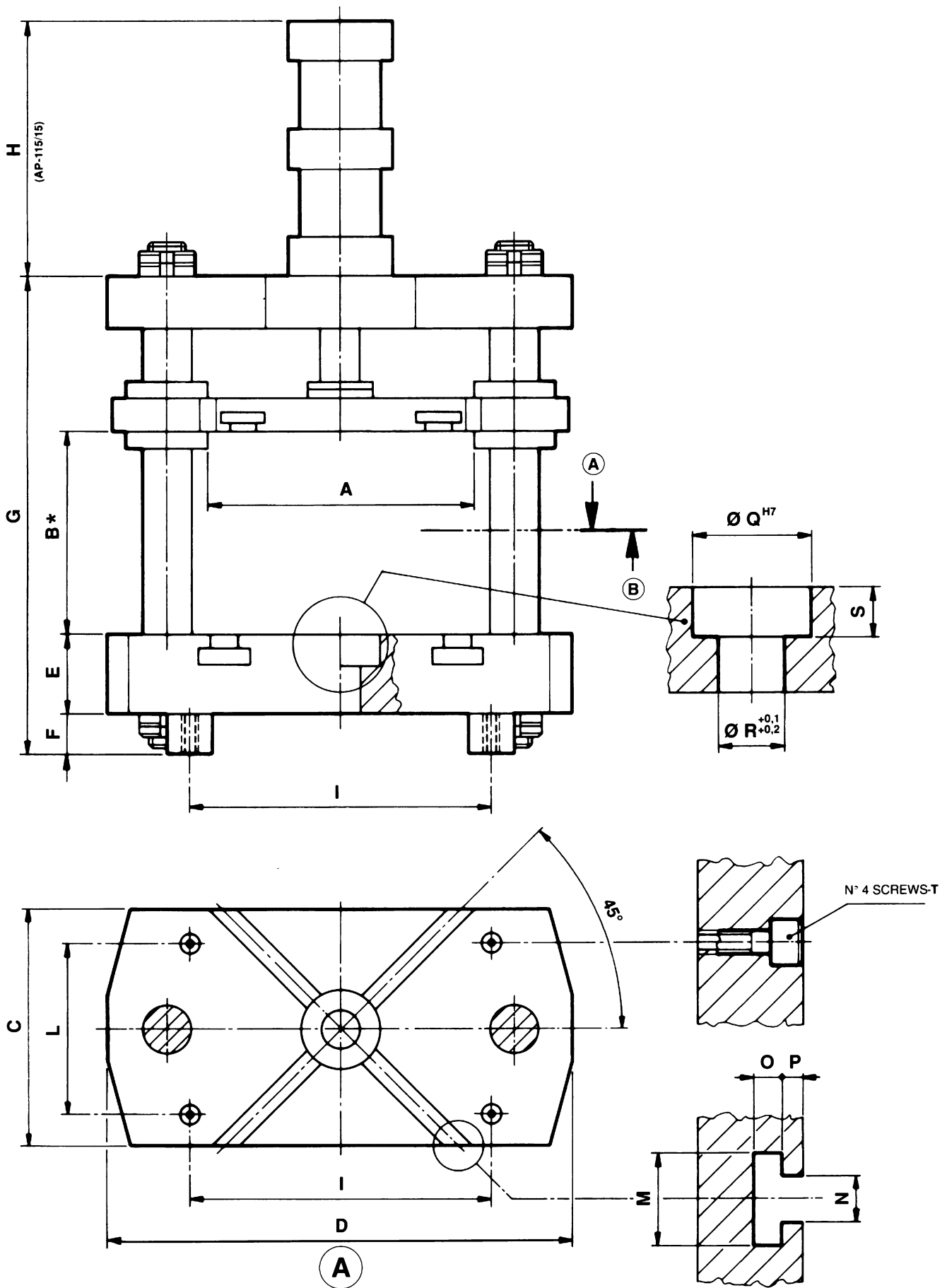
Series	OP 1	OP 3	OP 5	OP 8	OP 13	OP 21	OP 42
M	59	78	98	118	158	158	158
N	46	60	78	98	130	130	130
O	12	15	20	20	25	25	25
P	13	20	20	20	30	30	30
Q	25	35	40	40	55	55	55
R	M6	M8	M8	M8	M12	M12	M12
S	50	50	60	80	100	100	100
T	35	35	50	50	80	80	80
U	145	170	170	170	200	200	200
V	70	75	85	85	110	110	155

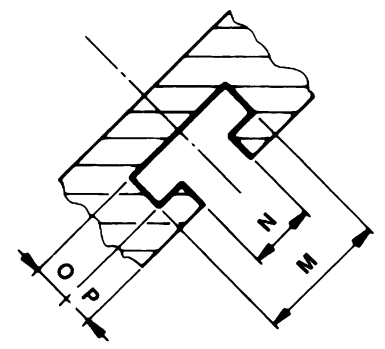
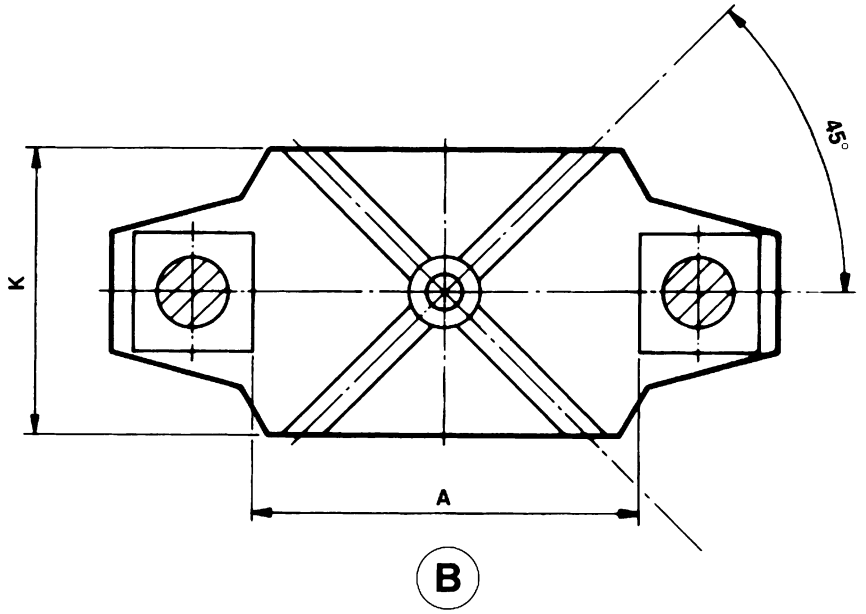
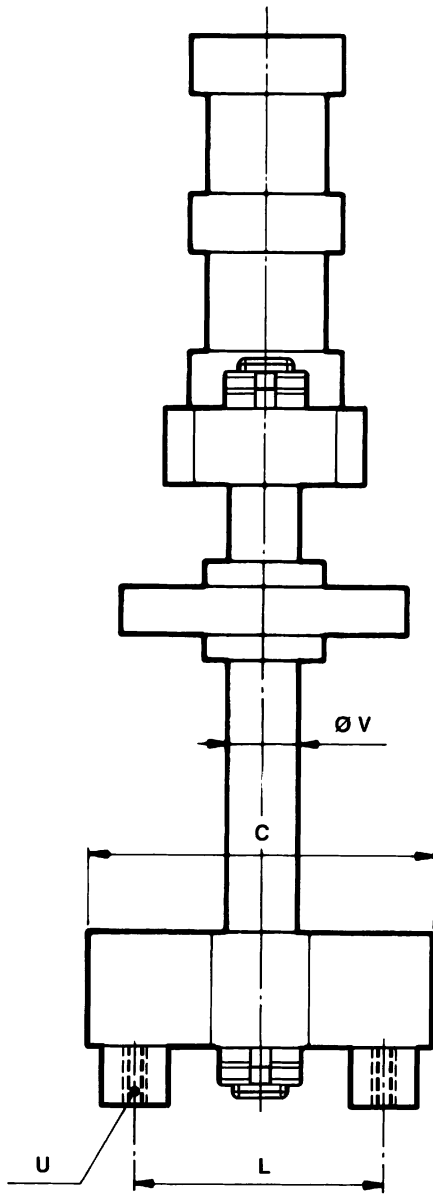


B\* - Different dimensions upon request

\*Work Port

Series	OP 1	OP 3	OP 5	OP 8	OP 13	OP 21	OP 42
A-XX	275	265	305	295	335	335	385
B-XX	252	232	267	257	283	283	333
C-XX	250	230	265	255	280	280	330
D-XX	240	230	255	245	255	255	305
F-XX	205	190	220	210	225	225	230
A-YY	310	300	345	340	380	380	430
B-YY	287	267	307	302	328	328	378
C-YY	285	265	305	300	325	325	375
D-YY	275	265	295	290	300	300	350
E	205	180	230	230	250	250	315



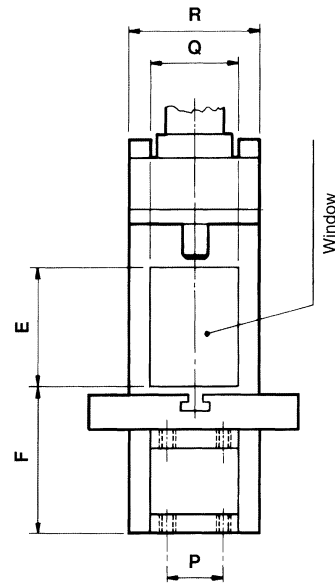
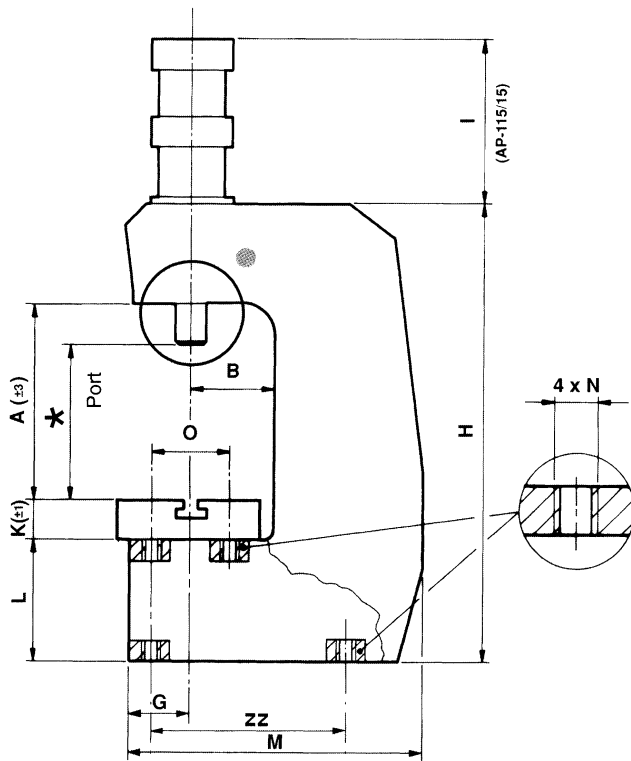


Series	OP 2MI 1	OP 2MI 3	OP 2MI 5	OP 2MI 8	OP 2MI 13	OP 2MI 21	OP 2MI 42
A	340	340	360	360	410	410	480
B*	250	250	300	300	400	400	450
C	250	250	300	300	350	350	400
D	470	470	570	570	660	660	780
E	35	55	75	75	95	95	118
F	35	35	50	50	60	60	80
G	460	515	640	650	820	820	936
H	670	700	830	850	885	920	1250
I	390	390	460	460	480	480	580
K	200	200	250	250	280	280	320
L	220	220	260	260	300	300	330
M	18	21	21	21	28	28	28
N	10	12	12	12	16	16	16
O	8	9	9	9	12	12	12
P	7	8	8	8	10	10	10
Q	60	70	70	90	110	110	110
R	45	50	50	60	70	70	70
S	16	18	18	18	25	25	25
T	M8X40	M8X60	M10X80	M10X80	M12X100	M12X100	M12X130
U	M8	M8	M10	M10	M12	M12	M12
V	40	40	60	60	80	80	100

B\* - Different dimensions upon request

Series	Weight kg	Shipping dimensions cm	Feed Hose Ø
OP 2MI-1	95	130x55x35	12
OP 2MI-3	125	130x55x35	17
OP 2MI-5	180	170x60x40	17
OP 2MI-8	255	170x60x40	17
OP 2MI-13	355	180x70x45	17
OP 2MI-21	465	200x70x45	17
OP 2MI-42	520	210x80x50	24





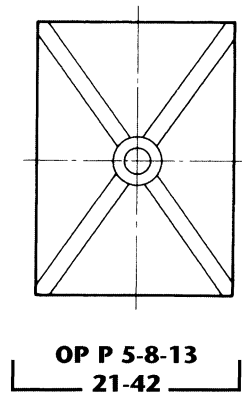
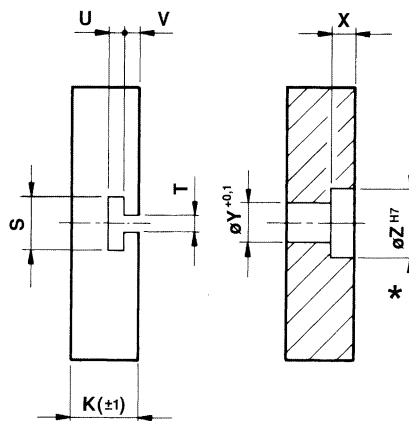
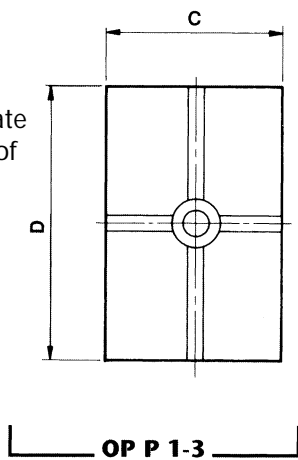
• Standard presses are supplied with female connection.

Series	OP P 1	OP P 3	OP P 5	OP P 8	OP P 13	OP P 21	OP P 42
A	285	380	420	440	470	470	530
B	120	150	160	180	200	200	230
C	200	250	280	300	350	350	400
D	300	350	400	450	500	500	600
E	190	260	260	290	320	320	350
F	225	280	305	355	430	430	550
G	90	115	132	125	140	140	155
H	620	855	910	1,000	1,150	1,150	1,505
I	560	520	630	650	680	710	850
L	170	225	225	260	310	310	450
M	400	540	590	620	710	710	910
N	M8	M10	M10	M10	M10	M10	M10
O	100	160	160	160	190	190	200
P	80	100	120	130	160	160	160
Q	110	130	160	190	230	260	210
R	140	180	220	260	310	360	410
S	18	21	21	21	28	28	28
T	10	12	12	12	16	16	16
U	8	9	9	9	12	12	12
V	7	8	8	8	10	10	10
Z	60	70	70	90	110	110	110
Y	45	50	50	60	70	70	70
K	31	36	46	56	75	75	75
X	16	18	18	18	25	25	25

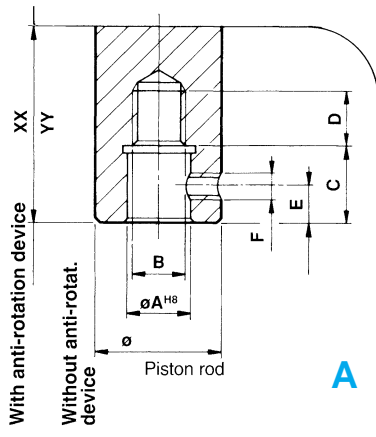
Series	Weight kg	Shipping dimensions cm	Feed Hose Ø
OP P-1	120	130x55x60	12
OP P-3	223	170x65x85	17
OP P-5	312	170x65x85	17
OP P-8	440	180x70x90	17
OP P-13	708	200x85x100	17
OP P-21	816	200x85x100	17
OP P-42	1,030	240x100x120	24

## Bolster Plate

\* Central hole of bolster plate is not concentric with axis of piston rod

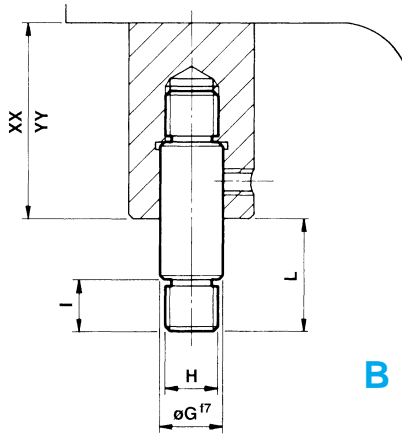


PISTON ROD WITH FEMALE CONNECTION



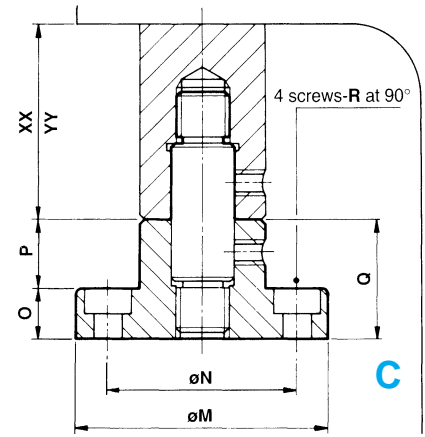
**A**

PISTON ROD WITH MALE CONNECTION



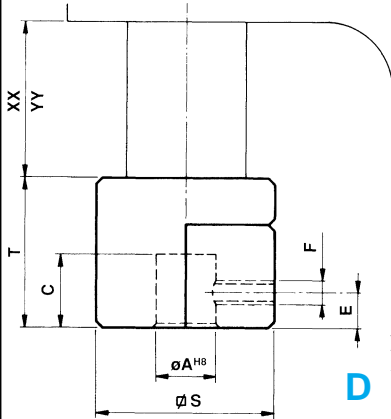
**B**

PISTON ROD WITH DIE HOLDER PAD



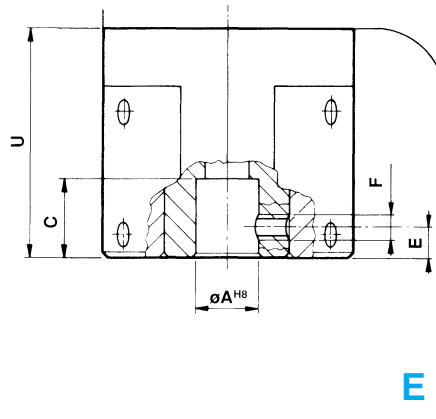
**C**

RADIAL DIE HOLDER PAD



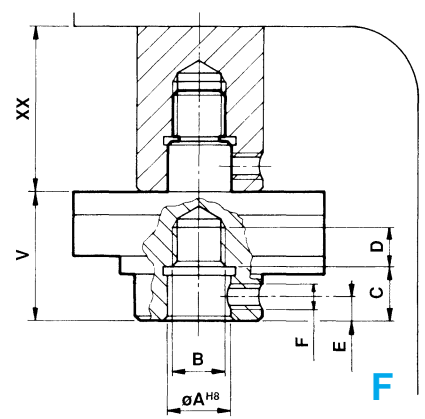
**D**

WITH RAM GROUP



**E**

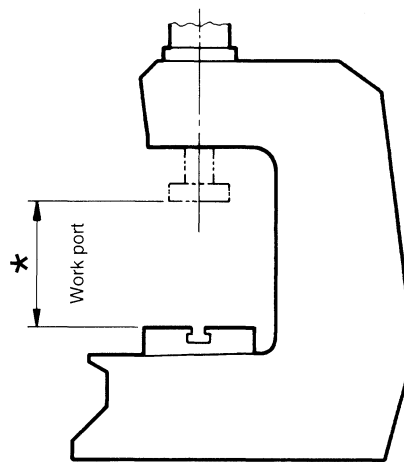
WITH LOAD CELL



**F**

Series	OP P 1	OP P 3	OP P 5	OP P 8	OP P 13	OP P 21	OP P 42
A	16	20	25	25	30	30	30
B	M12x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2	M27x2	M27x2
C	18	22	28	28	35	35	35
D	12	16	20	20	27	27	30
E	8	10	12	12	15	15	15
F	M6	M8	M8	M8	M8	M8	M8
G	16	20	25	25	30	30	30
H	M12x1.5	M16x1.5	M20x1.5	M20x1.5	M27x2	M27x2	M27x2
I	12	16	20	20	27	27	27
L	23	33	38	38	52	52	52

Series	OP P 1	OP P 3	OP P 5	OP P 8	OP P 13	OP P 21	OP P 42
M	59	78	98	118	158	158	158
N	46	60	78	98	130	130	130
O	12	15	20	20	25	25	25
P	13	20	20	20	30	30	30
Q	25	35	40	40	55	55	55
R	M6	M8	M8	M8	M12	M12	M12
S	50	50	60	80	100	100	100
T	35	35	50	50	80	80	80
U	145	170	170	170	200	200	200
V	70	75	85	85	110	110	155

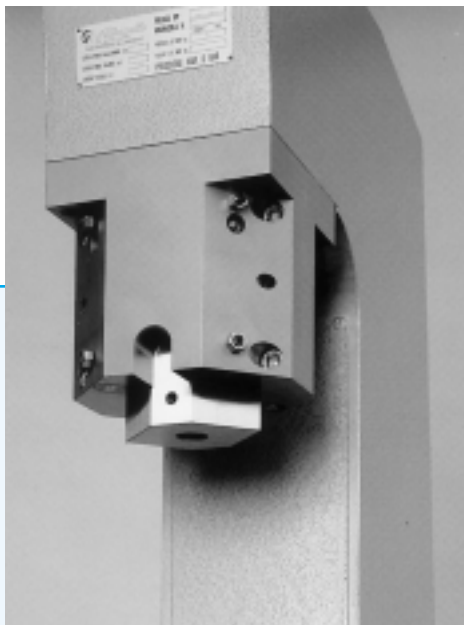


\*Work Port

	Series	OP P 1	OP P 3	OP P 5	OP P 8	OP P 13	OP P 21	OP P 42
With anti-rotation device	A-XX	210	295	325	335	355	355	400
	B-XX	187	262	287	297	303	303	348
	C-XX	185	260	285	295	300	300	345
	D-XX	175	260	275	285	275	275	320
	F-XX	140	220	240	250	245	245	245
	Without anti-rotation device	A-YY	245	330	365	380	400	400
B-YY		222	297	327	342	348	348	393
C-YY		220	295	325	340	345	345	390
D-YY		210	295	315	330	320	320	365
E		140	210	250	270	270	270	330

# Press Options

OP Series Presses use AP & AX series intensifiers. Please consult pages 6-9 for standard features and options, as well as these Press Specific Options.



## Option MB Ram Group

- Body in foliated cast iron
- Ram in hardened steel
- Slide band in P.T.F.E.
- Total stroke 60 mm



## Option ENC

Linear potentiometer with device to preset working stroke.



## Option 542 PP

Foot pedal, three position, step by step for presses without pneumatic equipment.

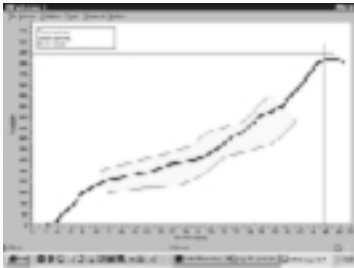


## Option TY

Stroke counter with manual zero set.

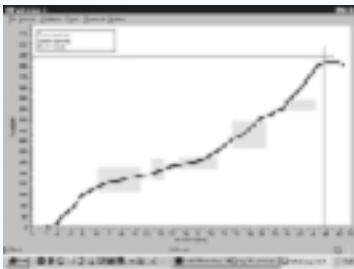


# ELECTRONIC PRODUCTION CONTROL SYSTEMS



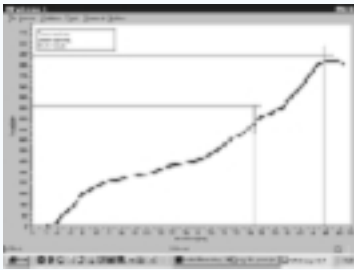
## TRO.

The peak of evolution in electronic control. It controls the pressing process by analyzing the stroke versus the force that generates during the manufacturing of each piece. This output curve can be compared to a user specified tolerance, that can be applied to any part or all of the process.



## CSQ.

As in the TRO the CSQ controls the pressing process by analyzing the stroke versus the force that generates during the manufacturing of each piece. This control is provided by the use of tolerance windows that monitor the process at user defined points.



## CHECK-POINT.

The most economical control system. It controls the quality of the piece by user defined limits to stroke and force.



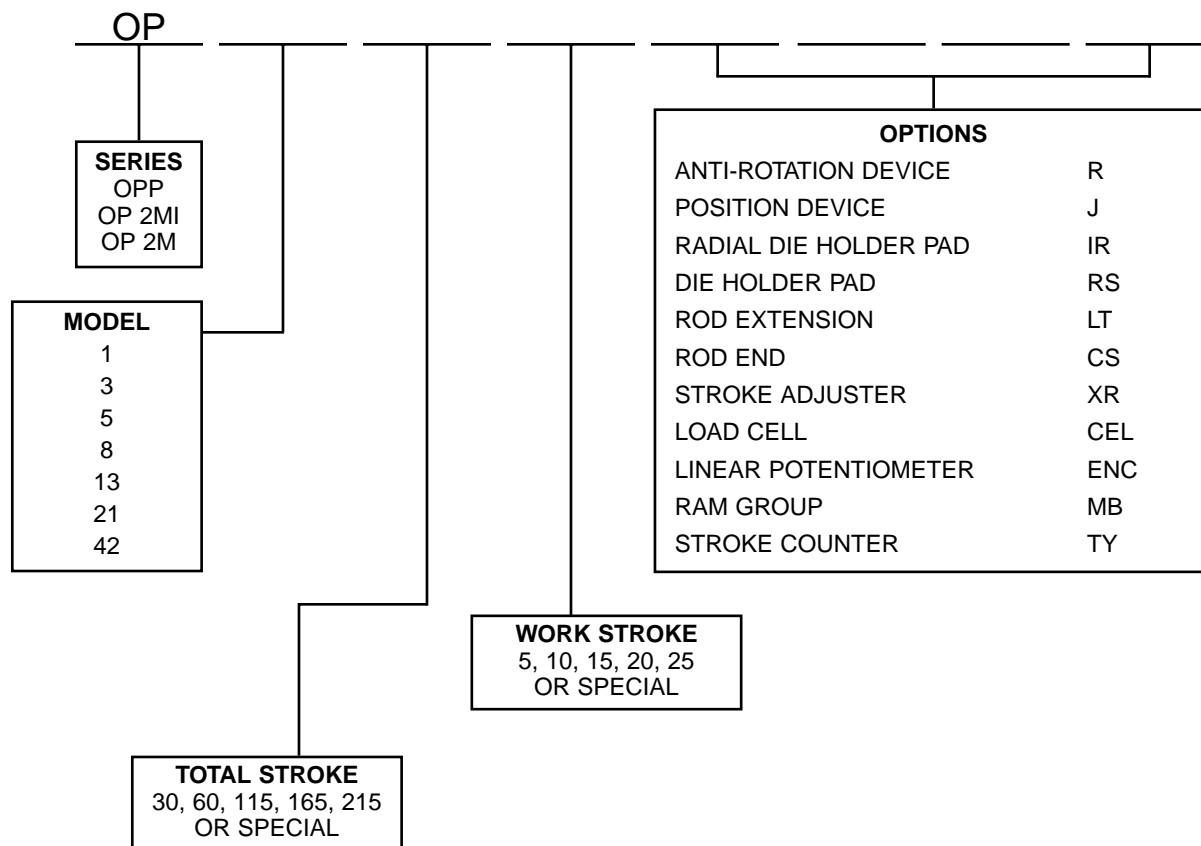
## CEL.

Using a load cell to provide an analog output of the force applied, this output is then displayed on an LED screen. It allows the machine operator a real time display of the force applied by the cylinder and the ability to provide set points to terminate the cycle.



# Ordering Code

## PRESSES



### ACCESSORIES (ORDER SEPARATELY)

FOOT PEDAL 341-542 PP

Presses can be supplied with the following added:

- Index Table
- Column Posts
- Pick & Place Unit
- Additional Intensifiers
- Electronic Feedback
- Special Pneumatic Controls



# TROMBOLINE

The MOP Series Press uses air to oil intensification combined with a manual approach to make a unit that is rapid and lessens operator strain



**15** Standard versions

**4** Models with adjustable forces:

MOP 07	700 kg -	1,543 lb.
MOP 15	1,450 kg -	3,197 lb.
MOP 30	3,000 kg -	6,614 lb.
MOP 50	5,000 kg -	11,024 lb.

**60** mm of stroke length

**4** Hydropneumatic working strokes

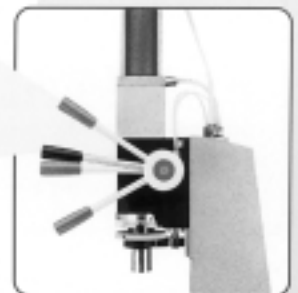
5 mm	0.19 in.	15 mm	0.59 in.
10 mm	0.39 in.	20 mm	0.78 in.

## The Exclusive Features

The TROMBOLINE consists of a hydropneumatic intensifier and a manually operated mechanical unit. The working cycle is split up into three phases.

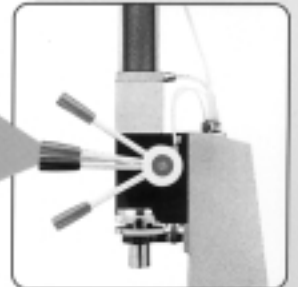
### Approach stroke

**1** The lever operates the down stroke of the piston rod through a rock-and-pinion device. It allows the approach of the tool to the workpiece.



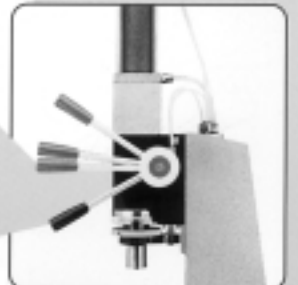
### Slip clutch stroke of intensifier

**2** The continuing movement of the lever, engages the intensifier. It operates with a friction clutch system



### Working stroke with hydropneumatic force

**3** With continued down stroke of the lever, the intensifier carries out the working stroke. Releasing the lever causes the unit to return to the starting position.



# Features

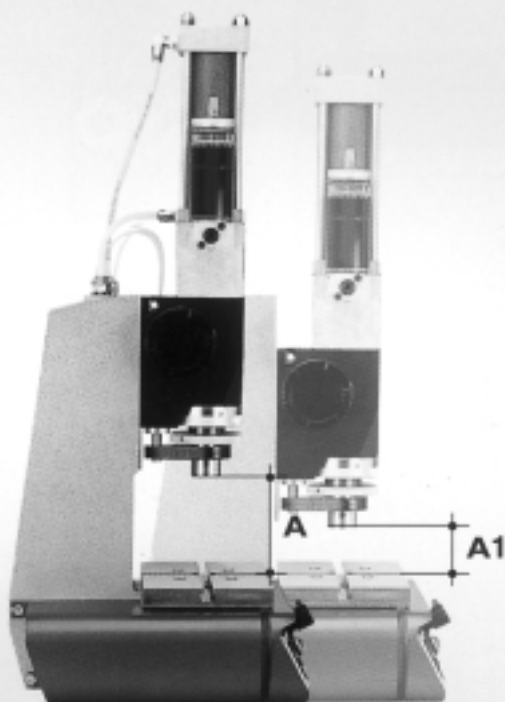
## 1 Readout of applied pressure

## 2 Pressure regulator (working stroke)

The force of the hydropneumatic intensifier is proportional to pressure setting.  
Ex. MOP 15 - force 1500 kg at 6 bar  
Set pressure:  
4 bar = 1500 : 6 x 4 = 1000 kg  
Mop is - Force 3300 lbs @ 87 psi  
Set pressure = 3300 : 87 x 60 = 2275 lbs

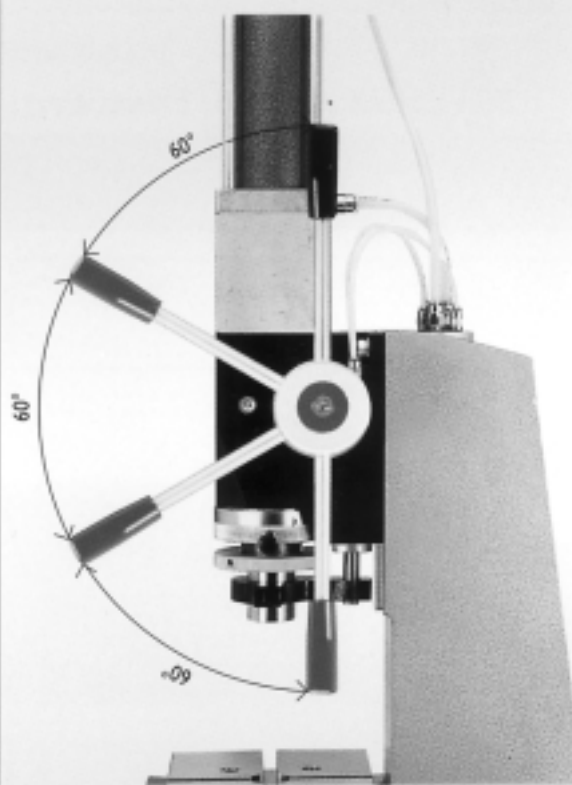
## 3 Switch with safety key

It cuts out hydropneumatic circuit



## Change of work height

The frame is provided with holes that allow to lower the power set, therefore to reduce the height.




## Operating lever

It can be positioned in 4 different points within 180° for a optimum ease of operation. To change position of the lever, unscrew and re-fit it in desired position.



# Features



**Approach stroke limiting bracket (T.D.C.)**

The bracket is used to position the tool. It shortens the return stroke of the piston rod.

The positioning is done by moving the piston rod to the desired position by means of the lever, then loosening the screw of the bracket, sliding it to the upper ledge and re-tightening the screw.

## Options

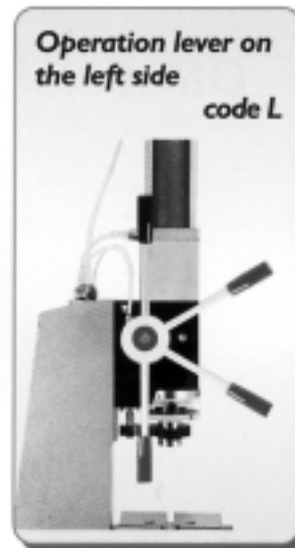


**Mechanical regulation of B.D.C. code X**

Locking ring

Regulation ring

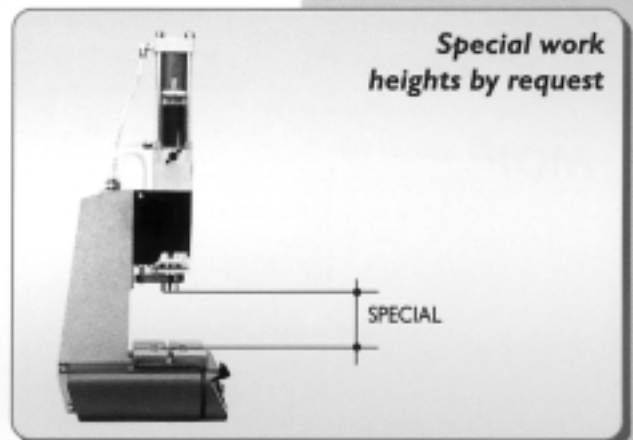
The end stroke (B.D.C.) can be regulated for 10 mm using the ring that operates on a movable positive stop, placed inside the cylinder. This device is absolutely necessary when a high precision in end stroke position is required



**Operation lever on the left side code L**



**Single power sets with manual or motor-driven operation**



**Special work heights by request**

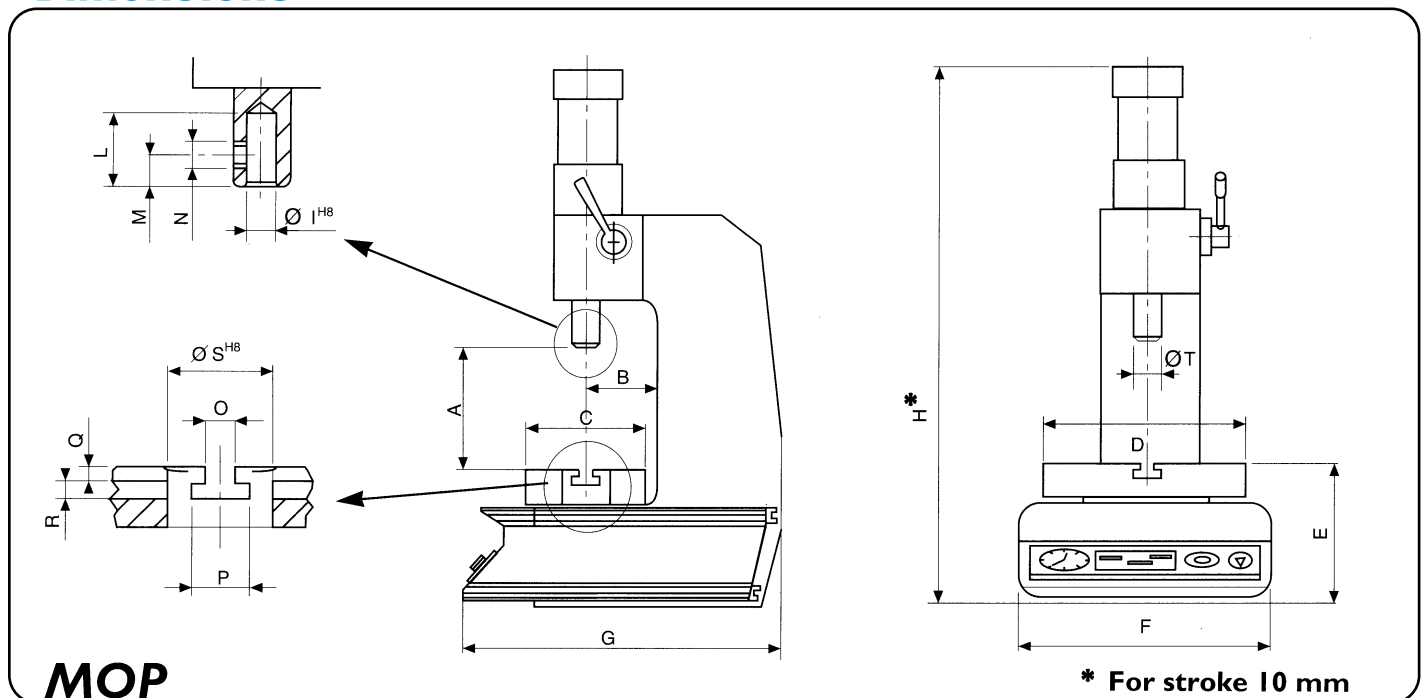
SPECIAL



# Performances

VALID FOR ALL VERSIONS		VERSIONS			
		MOP	MOPS	MOPH	
Power Fluid		filtered air max 7 bar (100 psi)			
Model		07	15	30	50
Working stroke force	kg @ 7 bar <i>lb @ 80 psi</i>	700 <i>1,420</i>	1,450 <i>2,940</i>	3,000 <i>6,080</i>	5000 <i>10,140</i>
Total Stroke	mm <i>in.</i>	60 <i>2.36</i>	60 <i>2.36</i>	60 <i>2.36</i>	60 <i>2.36</i>
Working stroke (hydropneumatic thrust)	mm <i>in.</i>	5 <i>.19</i>	10 <i>.39</i>	15 <i>.59</i>	20 <i>.78</i>
Thrust of return stroke	kg <i>lb.</i>	1.4 <i>3.08</i>	1.8 <i>2.96</i>	2.2 <i>4.85</i>	2.4 <i>5.29</i>
Mechanical regulation of bottom dead centre	mm <i>in.</i>	10 <i>.39</i>	10 <i>.39</i>	10 <i>.39</i>	10 <i>.39</i>
Consumption at 6 bar for 1 mm of working stroke	nL	0.188	0.337	0.566	1.098
Max weight of tools applied	kg <i>lb.</i>	0.8 <i>1.76</i>	1.3 <i>2.86</i>	1.8 <i>3.96</i>	1.8 <i>3.96</i>
Working speed at 6 bar	mm/sec <i>in./sec</i>	90 <i>3.54</i>	65 <i>2.56</i>	40 <i>2.57</i>	30 <i>1.18</i>

## Dimensions



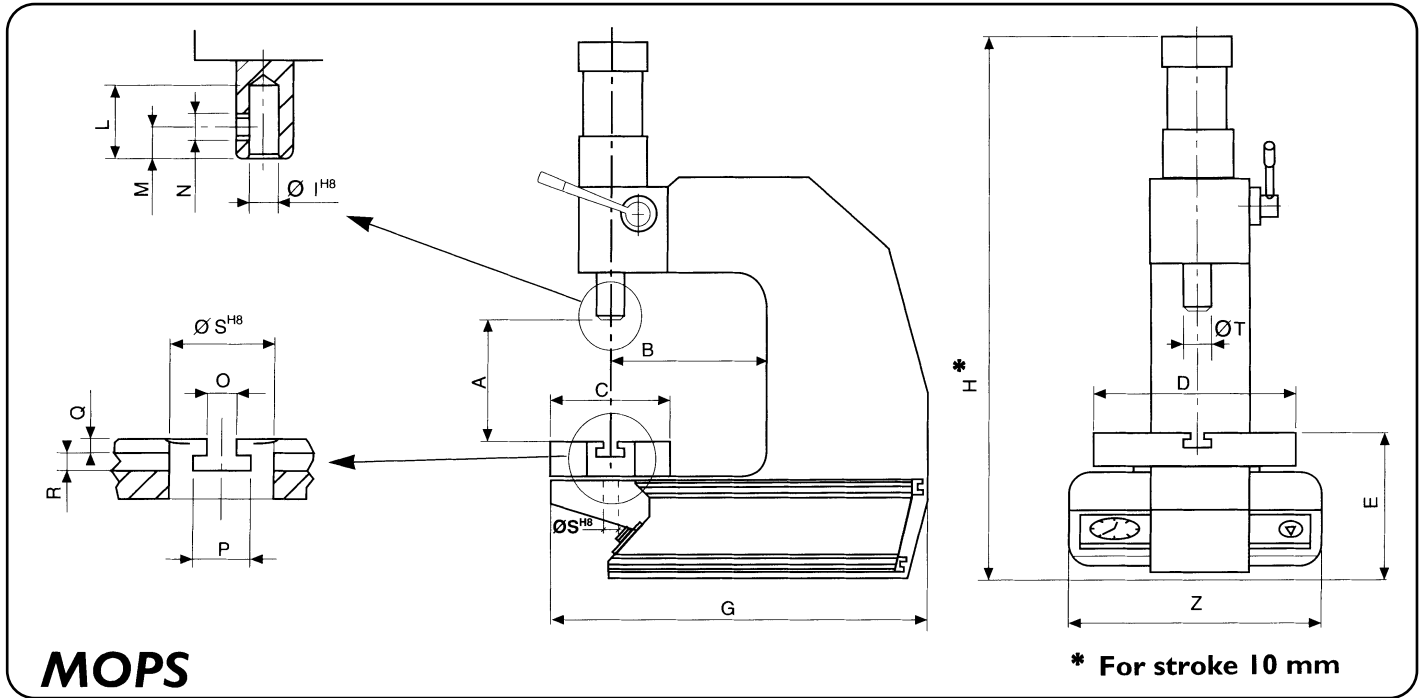
**MOP**

with power set in low position

	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	Weight kg
MOP 07	100	50	85	150	180	107	290	315	650	14	45	15	M8	10	18	7	8	30	35	45
MOPB 07	180	50	85	150	180	107	290	315	650	14	45	15	M8	10	18	7	8	30	35	45
MOP 15	117	67	85	150	200	127	300	335	726	14	45	15	M8	10	18	7	8	30	35	62
MOPB 15	217	67	85	150	200	127	300	335	726	14	45	15	M8	10	18	7	8	30	35	62
MOP 30	150	100	100	160	220	155	340	390	835	20	50	15	M8	12	21	8	9	30	50	105
MOPB 30	250	100	100	160	220	155	340	390	835	20	50	15	M8	12	21	8	9	30	50	105
MOP 50	200	110	190	300	205	400	475	980	20	50	15	M8	12	21	8	9	30	50	130	148



# Dimensions

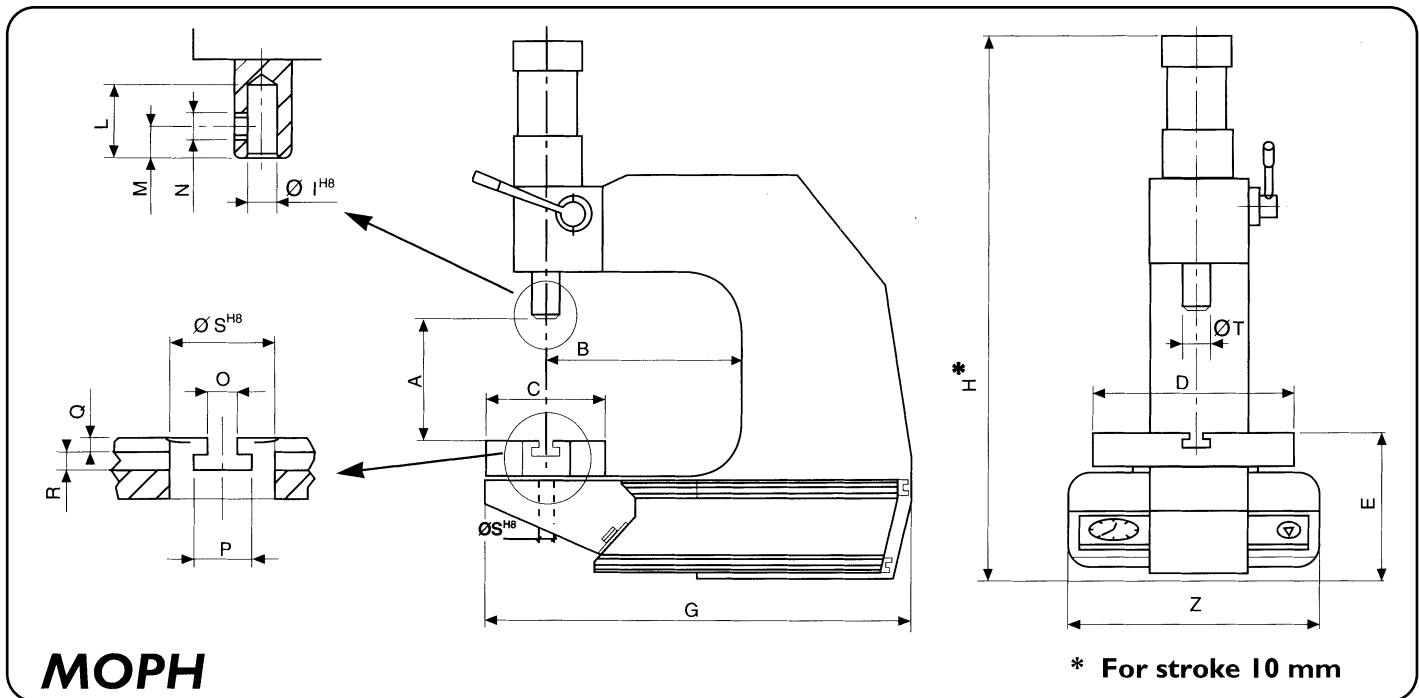


## MOPS

with power set in low position

	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	Z	Weight kg
MOPS 07	100	50	170	150	180	140	290	410	690	14	45	15	M8	10	18	7	8	30	35	60	59
MOPS 15	140	70	170	150	200	180	300	480	790	14	45	15	M8	10	18	7	8	30	35	80	81
MOPS 30	190	140	200	160	220	210	340	550	900	20	50	15	M8	12	21	8	9	30	50	100	128
MOPS 50	190	140	200	160	220	210	340	550	900	20	50	15	M8	12	21	8	9	30	50	100	128

# Dimensions



## MOPH

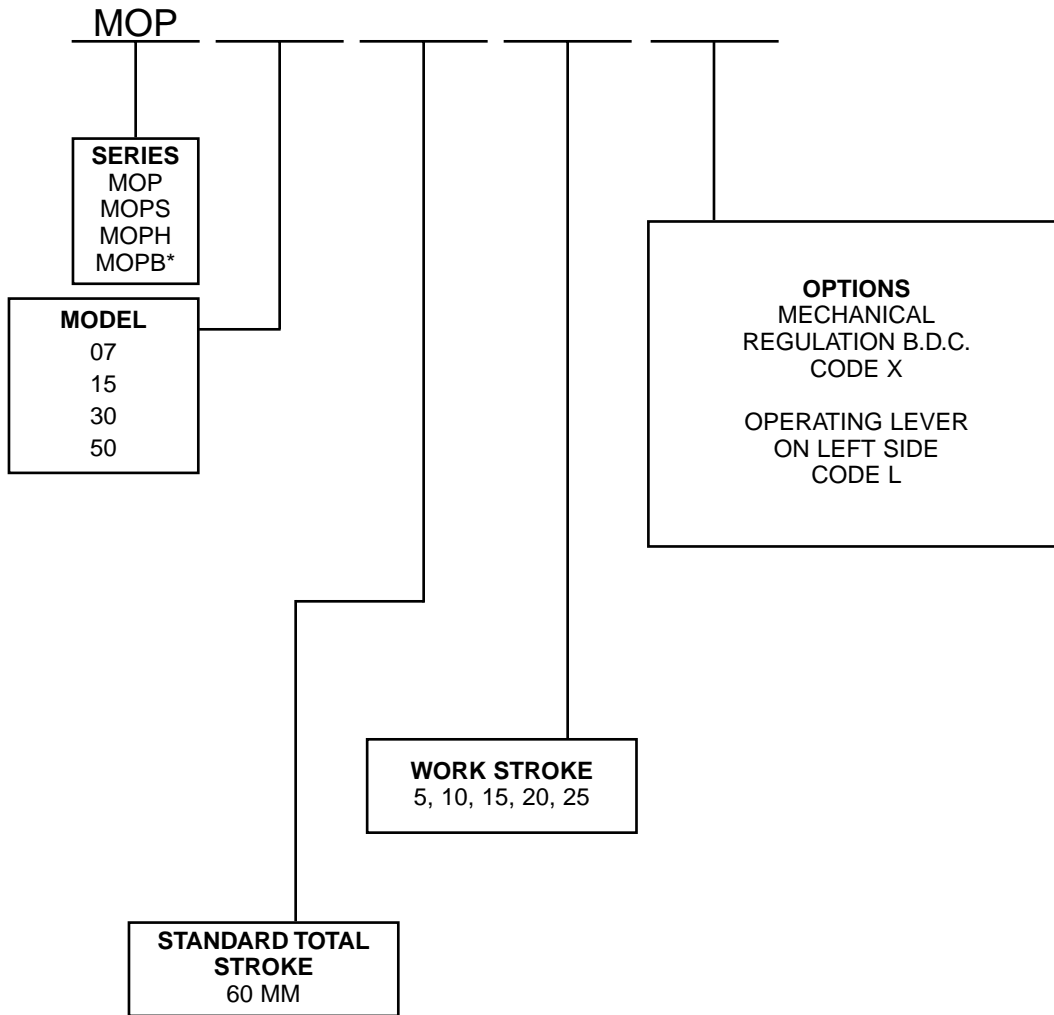
with power set in low position

	A	A1	B	C	D	E	F	G	H	I	L	M	N	O	P	Q	R	S	T	Z	Weight kg
MOPH 07	100	50	250	150	180	190	290	560	740	14	45	15	M8	10	18	7	8	30	35	60	75
MOPH 15	140	70	300	150	200	240	300	670	840	14	45	15	M8	10	18	7	8	30	35	80	109
MOPH 30	190	140	350	160	220	280	340	770	960	20	50	15	M8	12	21	8	9	30	50	100	154
MOPH 50	190	140	350	160	220	280	340	770	960	20	50	15	M8	12	21	8	9	30	50	100	154



# Ordering Code

## TROMBOLINE



\*Not available for Model 50

