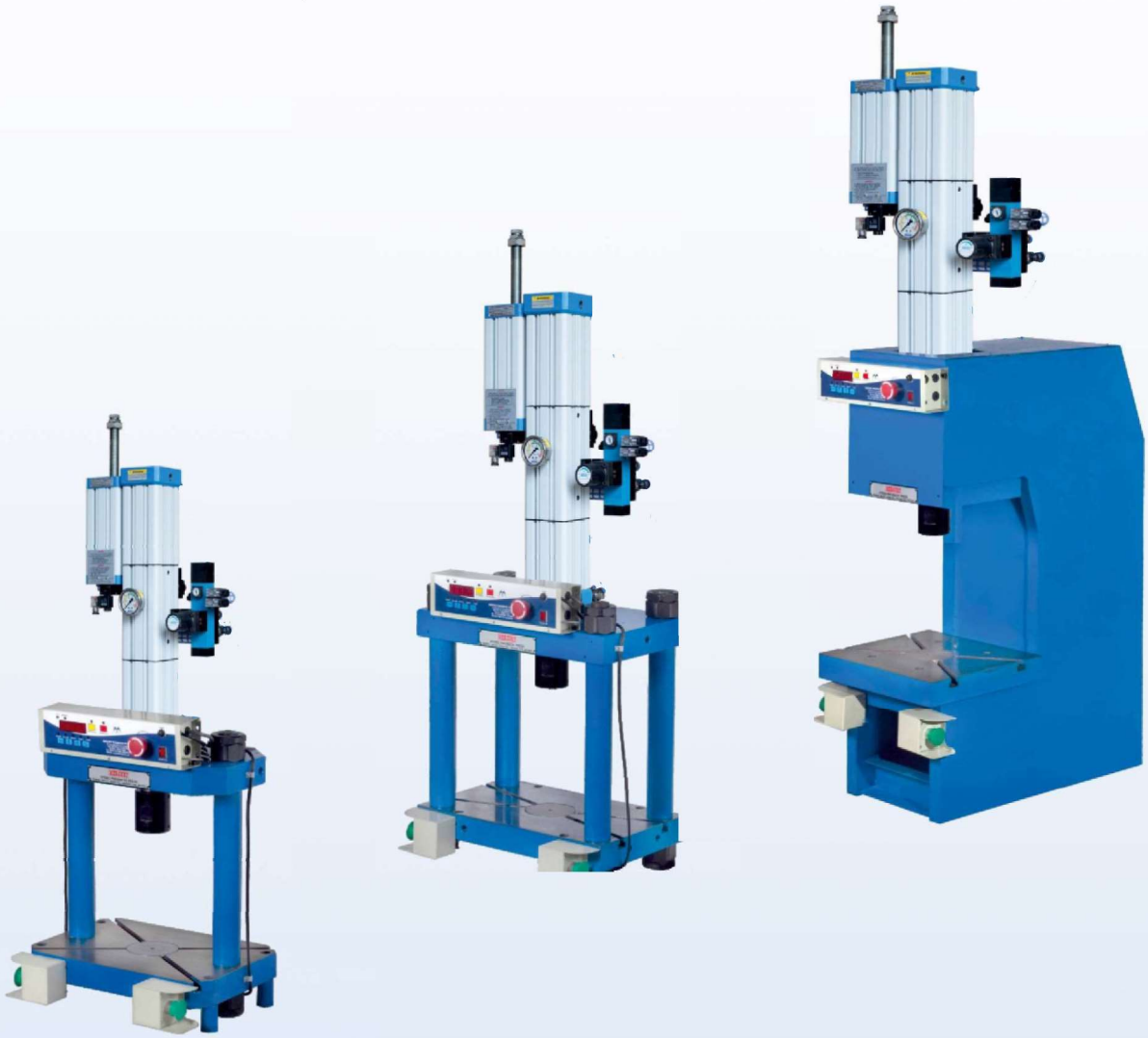
MERCURY
Leadership through innovation

# Hydro Pneumatic Presses

*The efficient, low cost alternative to Hydraulic, Power and Hand operated Presses*




## Mercury Pneumatics Pvt. Ltd.

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Mumbai - 400072. India, Phone No.: +91-22-40151020
E-mail: contactus@mercuryindia.net  Website: www.mercuryindia.net

**MERCURY** Hydro Pneumatic Presses are products of extensive development efforts initiated in 1988. Over 22,000 of these time tested & reliable machines are working in various industries all over India as of Dec 2019

## Salient Features

- **Fast Action** : 2T @ 100 cycles / min (CPM),4T@60CPM, 8T@40CPM,15T/30T/45T@20 CPM (with parking feature)
- **Compact, light weight & vibration free** : Can be mounted on existing work benches without any foundation
- **Versatile** : Force & speed can be varied infinitely. Machine can be mounted in any orientation
- **Energy efficient** : 50% to 70% saving over equivalent hydraulic and pneumatic systems
- **Low cost** : Upto 50% cheaper than hydraulic presses
- **Safety** : True, non tie down, interlocked Two Hand Safety operation
- **Aesthetics** : Specially designed two tone, squareline cylinder

## Sequence of Operation

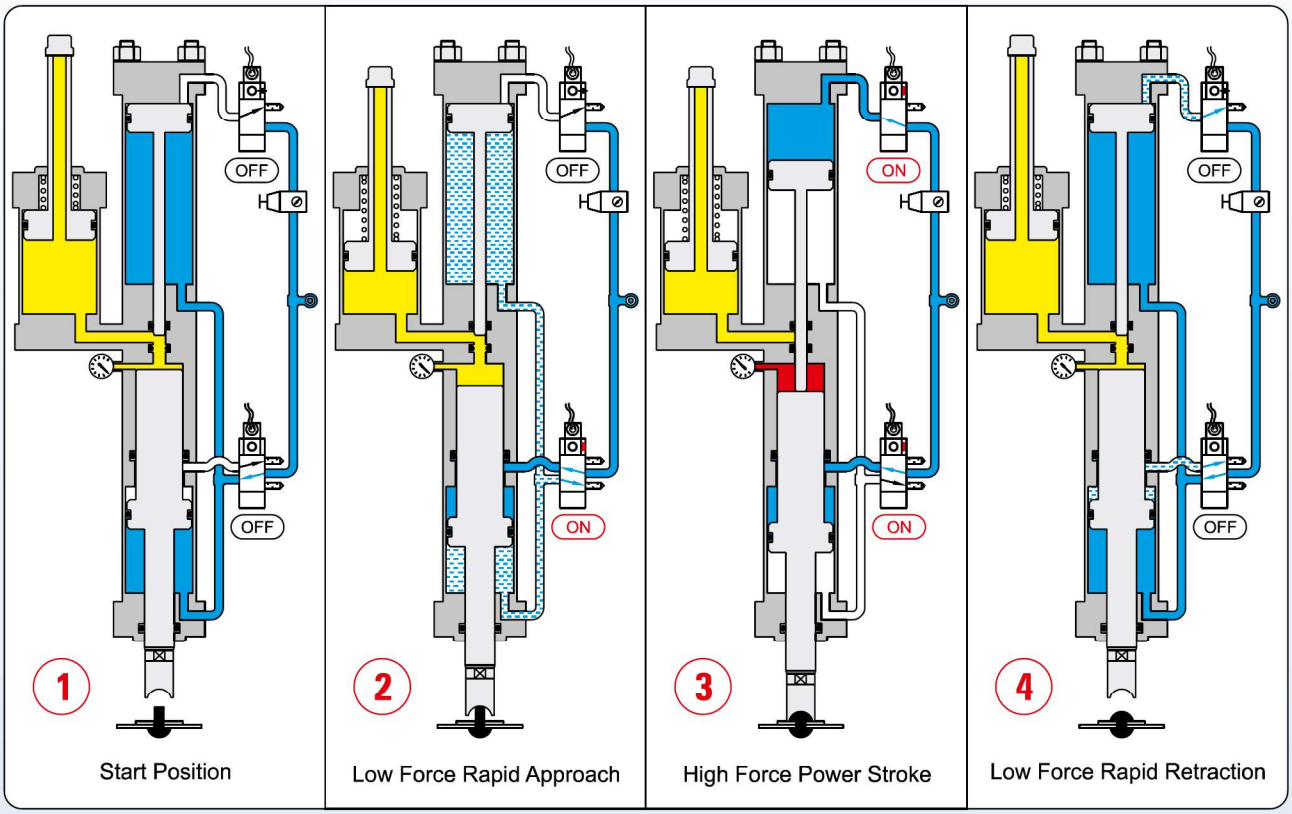
There are three stages of operation

(a) Initial low force, large travel, fast approach (Fig.②)

(b) High force, short travel (6, 12 or 24 mm), Power Stroke (Fig.③)

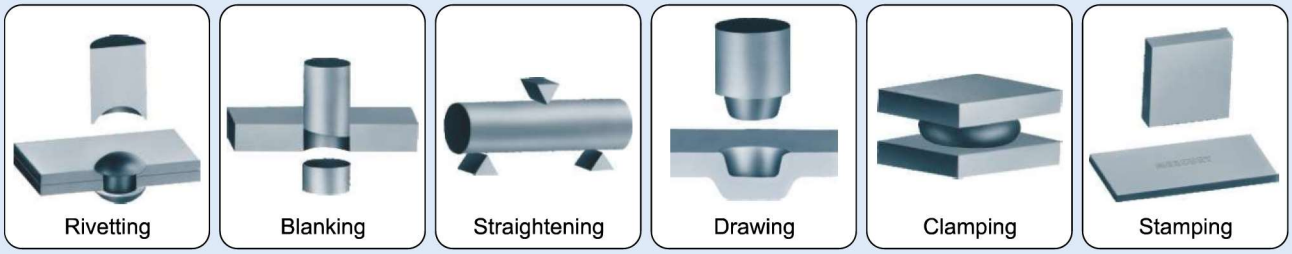
(c) Low force, rapid retraction (Fig.④)

The low force approach and retraction at 5 bar air pressure results in upto 70% saving in energy.




## Typical Applications

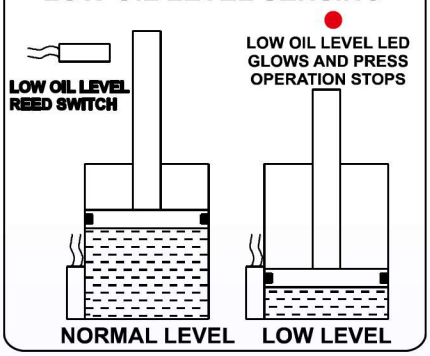
**MERCURY** Hydro Pneumatic Presses are ideal machines for any application requiring pressing force from 0.4 tonnes to 45 tonnes. They are specially suited for metal forming.



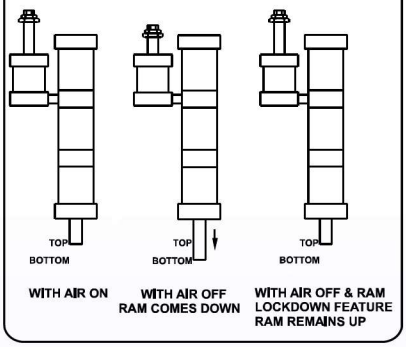
# Hydro Pneumatic Press Series "A" - Standard Features

MERCURY

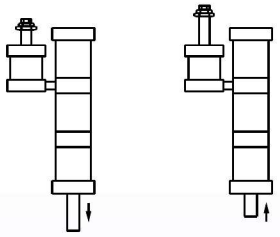
## LOW OIL LEVEL SENSING



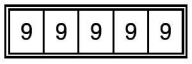

## RAM LOCKDOWN FEATURE




## LOW ENERGY SYSTEM

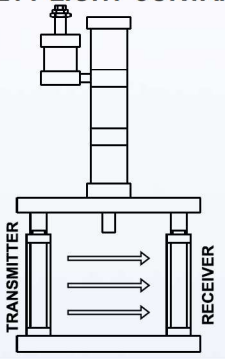



## DIGITAL STROKE COUNTER

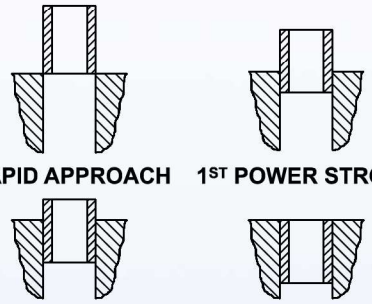



# Hydro Pneumatic Press - Optional Features

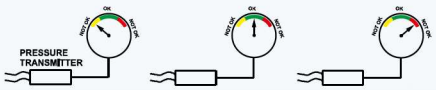
## SAFETY LIGHT CURTAIN




## AUTO CYCLING OF POWER STROKE

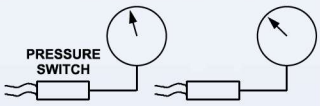



## LOW & HIGH PRESSURE TRANSMITTER SENSING



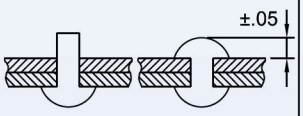

● PRESS OPERATION STOPS WHEN TONNAGE FALLS OUT OF SET RANGE

## LOW PRESSURE SENSING WITH A PRESSURE SWITCH

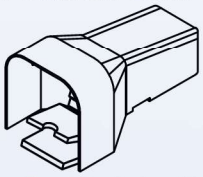



● PRESS OPERATION STOPS

## POWER STROKE DEPTH CONTROL



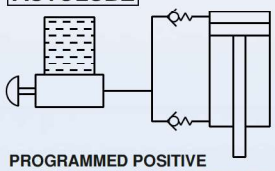

## FOOT SWITCH WITH GUARD



FG - Foot Switch with Guard
FG2 - Heavy duty Foot Switch

## DUAL FORCE CIRCUIT

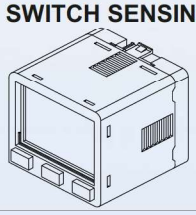
## AUTOMATIC LUBRICATION AUTOLUBE®



PROGRAMMED POSITIVE LUBRICATION UNDER PRESSURE

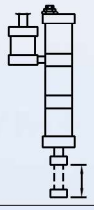
## TOOL LIFE & COMPONENT SENSING

## PNEUMATIC PRESSURE SWITCH SENSING

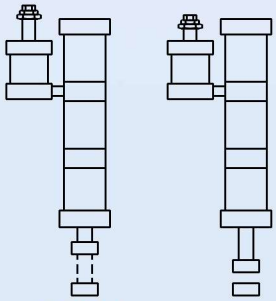


## CONTINUOUS CYCLING

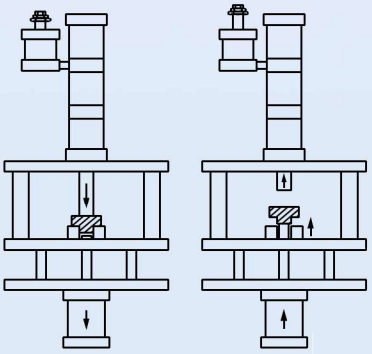
TO LINK WITH PRESS FEEDERS AND OTHER AUTOMATION DEVICES



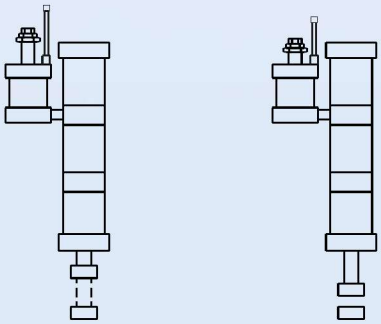
## PARKING FEATURE



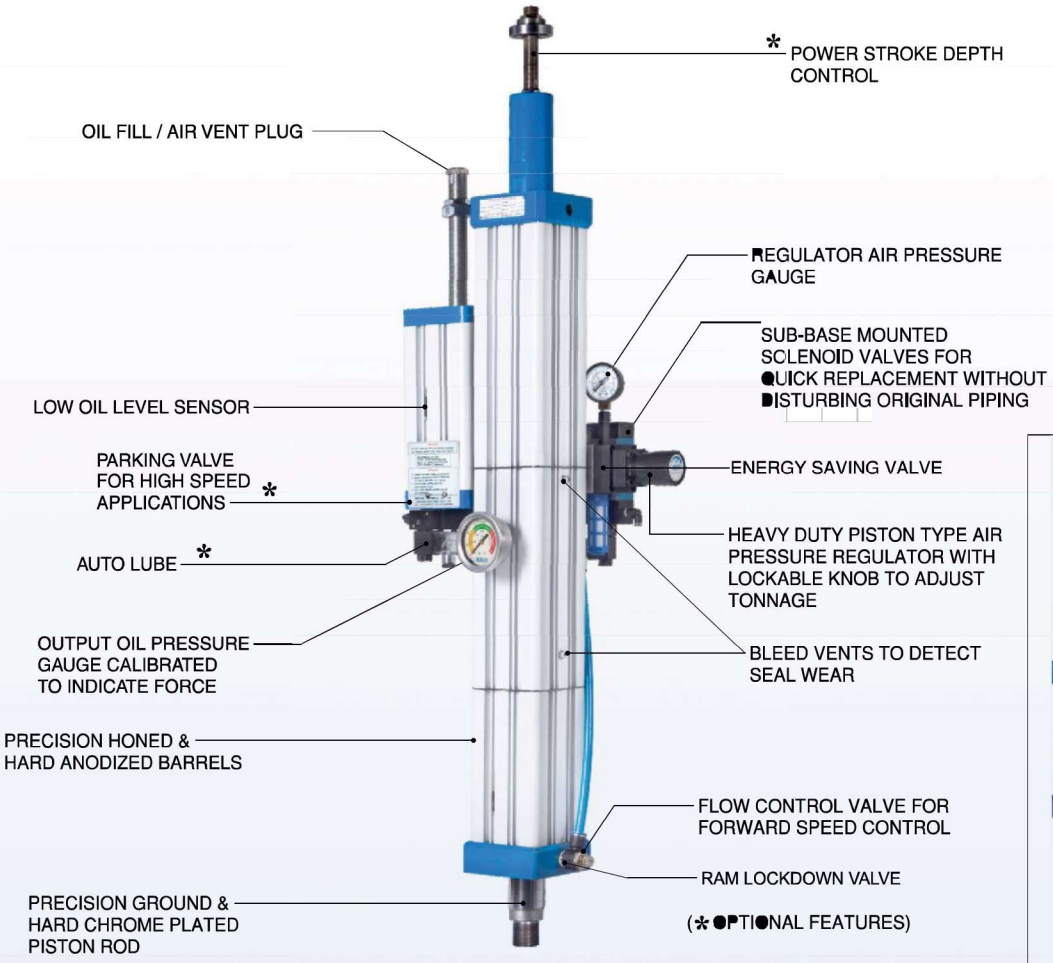

## JOB EJECTION



## APPROACH RETURN DEPTH CONTROL



# Hydro Pneumatic Press Cylinder

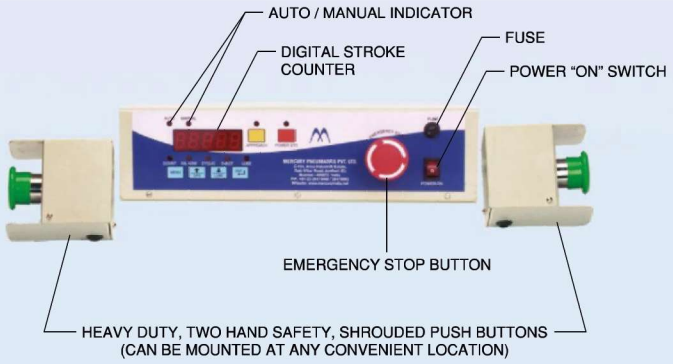



**Series 'A'**

**Series 'N'**

## COMPACT "TRUE" TWO HAND "NON TIE DOWN" SAFETY CONTROLS

### DE2HS




### Standard Features

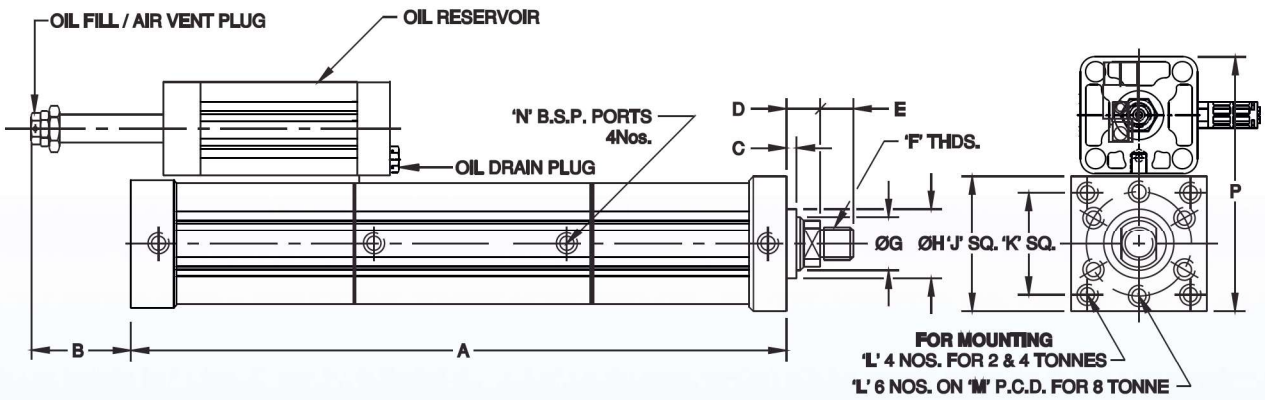
Auto & Manual Mode
2 Hands Safety
Digital Stroke Counter
Low Oil Level Indicator

### Optional Features

Auto Cycling of Power Stroke
Foot Switch Operation
Auto Lube Integration
Low Pressure Switch Sensing
Safety Light Curtain Integration
Ejection Cylinder Integration
Parking Feature
Automatic Feeder Integration
Inching Facility
Pneumatic Pressure Switch Sensing
Dual Force Circuit
Tool Life & Component Sensing

# HYDRO PNEUMATIC PRESS DIMENSIONS

MERCURY




| MODEL No. | TON @ 5 BARS | Total Stroke | Power Stroke | A | B | C | D | E | F | ØG | ØH | J SQ. | K SQ. | L | M | N | P | Q (NL) AIR. CONSU. @ 5 BARS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A 016-75 | 1 | 75 | 24 | 597 | 80 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 5.3 |
| A 016-100 | 1 | 100 | 24 | 647 | 80 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 6.1 |
| A 016-150 | 1 | 150 | 24 | 747 | 80 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 7.5 |
| AH 21-50 | 2.5 | 50 | 6 | 495 | 97 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 4.1 |
| AH 21-75 | 2.5 | 75 | 6 | 545 | 97 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 4.8 |
| AH 21-100 | 2.5 | 100 | 6 | 595 | 97 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 5.5 |
| AH 21-150 | 2.5 | 150 | 6 | 695 | 97 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 7.0 |
| AH 24-75 | 2.5 | 75 | 12 | 641 | 104 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 6.9 |
| AH 24-100 | 2.5 | 100 | 12 | 691 | 104 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 7.6 |
| AH 24-150 | 2.5 | 150 | 12 | 791 | 104 | 4 | 19.0 | 30 | M20x1.5 | 25 | 45 | 80 | 55 | M12x1.75 | - | 1/4" | 158 | 9.0 |
| A 026-75 | 2 | 75 | 24 | 628 | 75 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 10.1 |
| A 026-100 | 2 | 100 | 24 | 678 | 75 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 11.2 |
| A 026-150 | 2 | 150 | 24 | 778 | 75 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 13.5 |
| A 041-50 | 4 | 50 | 6 | 512 | 128 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 6.6 |
| A 041-75 | 4 | 75 | 6 | 562 | 128 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 7.7 |
| A 041-100 | 4 | 100 | 6 | 612 | 128 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 8.9 |
| A 041-150 | 4 | 150 | 6 | 712 | 128 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 11.2 |
| A 044-75 | 4 | 75 | 12 | 658 | 44 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 11.1 |
| A 044-100 | 4 | 100 | 12 | 708 | 44 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 12.3 |
| A 044-150 | 4 | 150 | 12 | 808 | 44 | 4 | 22.0 | 35 | M24x2.00 | 32 | 55 | 102 | 78 | M16x2 | - | 1/4" | 200 | 14.6 |
| A 046-75 | 4 | 75 | 24 | 713 | 63 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 18.1 |
| A 046-100 | 4 | 100 | 24 | 763 | 63 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 19.8 |
| A 046-150 | 4 | 150 | 24 | 863 | 63 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 23.2 |
| A 081-50 | 8 | 50 | 6 | 571 | 154 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 11.4 |
| A 081-75 | 8 | 75 | 6 | 621 | 154 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 13.2 |
| A 081-100 | 8 | 100 | 6 | 671 | 154 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 14.9 |
| A 081-150 | 8 | 150 | 6 | 771 | 154 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 18.3 |
| A 084-75 | 8 | 75 | 12 | 740 | 41 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 19.6 |
| A 084-100 | 8 | 100 | 12 | 790 | 41 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 21.3 |
| A 084-150 | 8 | 150 | 12 | 890 | 41 | 4 | 25.0 | 35 | M36x2.00 | 50 | 75 | 126 | - | M16x2 | 105 | 1/2" | 245 | 24.8 |
| N 086-75 | 7.25 | 75 | 24 | 760 | - | 4 | 24.5 | 50 | M56x3 | 80 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 52 |
| N 086-100 | 7.25 | 100 | 24 | 810 | 90 | 4 | 24.5 | 50 | M56x3 | 80 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 55 |
| N 086-150 | 7.25 | 150 | 24 | 910 | 90 | 4 | 24.5 | 50 | M56x3 | 80 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 62 |
| N 151-50 | 15 | 50 | 6 | 617 | 33 | 4 | 24.5 | 35 | M40x2 | 56 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 33 |
| N 151-75 | 15 | 75 | 6 | 667 | 33 | 4 | 24.5 | 35 | M40x2 | 56 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 36 |
| N 151-100 | 15 | 100 | 6 | 717 | 183 | 4 | 24.5 | 35 | M40x2 | 56 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 40 |
| N 151-150 | 15 | 150 | 6 | 817 | 183 | 4 | 24.5 | 35 | M40x2 | 56 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 46 |
| N 154-75 | 15 | 75 | 12 | 760 | - | 4 | 24.5 | 35 | M40x2 | 56 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 54 |
| N 154-100 | 15 | 100 | 12 | 810 | 90 | 4 | 24.5 | 35 | M40x2 | 56 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 57 |
| N 154-150 | 15 | 150 | 12 | 910 | 90 | 4 | 24.5 | 35 | M40x2 | 56 | 90 | 182 | - | M20x2.5 | 125 | 1/2" | 330 | 64 |
| N 156-75 | 14.75 | 75 | 24 | 854 | - | 4 | 26.0 | 50 | M56x3 | 80 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 92 |
| N 156-100 | 14.75 | 100 | 24 | 894 | 58 | 4 | 26.0 | 50 | M56x3 | 80 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 96 |
| N 156-150 | 14.75 | 150 | 24 | 994 | 58 | 4 | 26.0 | 50 | M56x3 | 80 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 104 |
| N 301-50 | 30 | 50 | 6 | 672 | 20 | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 56 |
| N 301-75 | 30 | 75 | 6 | 722 | 20 | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 60 |
| N 301-100 | 30 | 100 | 6 | 772 | 190 | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 64 |
| N 301-150 | 30 | 150 | 6 | 872 | 190 | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 72 |
| N 304-75 | 30 | 75 | 12 | 854 | - | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 95 |
| N 304-100 | 30 | 100 | 12 | 894 | 58 | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 99 |
| N 304-150 | 30 | 150 | 12 | 994 | 58 | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 107 |
| N 304-200 | 30 | 200 | 12 | 1094 | 58 | 4 | 26.0 | 40 | M48x3 | 63 | 90 | 240 | - | M24x3 | 150 | 1/2" | 420 | 117 |
| N 306-100 | 30 | 100 | 24 | 1133 | - | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 218 |
| N 306-150 | 30 | 150 | 24 | 1233 | - | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 231 |
| N 306-200 | 30 | 200 | 24 | 1333 | - | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 243 |
| N 451-100 | 45 | 100 | 6 | 842 | 161 | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 110 |
| N 451-150 | 45 | 150 | 6 | 942 | 161 | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 122 |
| N 451-200 | 45 | 200 | 6 | 1042 | 211 | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 134 |
| N 454-100 | 45 | 100 | 12 | 1015 | - | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 175 |
| N 454-150 | 45 | 150 | 12 | 1115 | - | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 187 |
| N 454-200 | 45 | 200 | 12 | 1215 | 38 | 4 | 31.0 | 50 | M64x4 | 80 | 100 | 285 | - | M42x4.5 | 175 | 3/4" | 459 | 199 |

## To Calculate Compressor Power Capacity

1HP = 120 litres of Free Air (NL) Per Minute at 5 Bars.

N = Number of Cycles per minute

Q= Free Air Consumed Per Cycle (From Chart) in Normal Litres (NL)

Power Required = $\frac{Q \times N}{120}$ (H.P.) or $\frac{Q \times N}{120}$ x 0.746 (KW)

| Output Forces (kgf.) @ Line Pressure of 6 Bar & Regulated Pressure of 5 Bar. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Tonnage | A016 | AH21/24 | A026 | A041/044 | A046 | A081/084 | 15T | 30T | 45T |
| Approach | 90 | 90 | 120 | 120 | 140 | 140 | 435 | 435 | 680 |
| Power | 975 | 2495 | 1970 | 4000 | 3900 | 7750 | 14750 | 29175 | 44950 |
| Return | 140 | 140 | 210 | 210 | 290 | 290 | 825 | 1160 | 1300 |

Example :- A 4Tonne,50mm stroke with 6mm power stroke press is used at 5 Bars to cut Aluminium washer from a sheet of 10 pieces per minute.

1) From above chart model A041-150 cylinder consumes 6.6 NL of air per cycle
2) @ 10 strokes/min air consumption = 6.6 X 10 = 66.0 NLPM
3) Electric Power Used = 66.0 ÷ 120 = 0.55 HP ≃ 0.41 KW
4) Cost of electricity @ Rs 10.0 per KWH = 0.41 X 10 = Rs 4.10
5) Cost of electricity per cut piece = 4.10÷10÷60 = 0.006 Rs i.e 0.60 paisa per piece



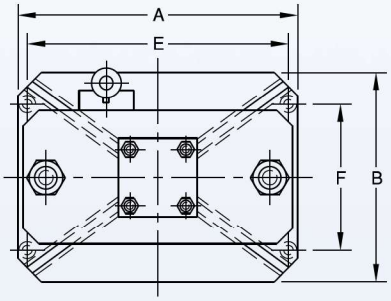
Note : Due to constant improvements, dimensions and technical specifications are subject to change without notice.

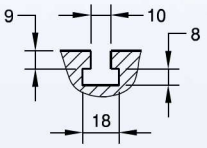
Plain

Anti Rotation Guide

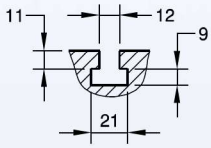
Guided Moving Platen

**PLAIN (2P--) & WITH ANTI ROTATION GUIDE (2P--R)**



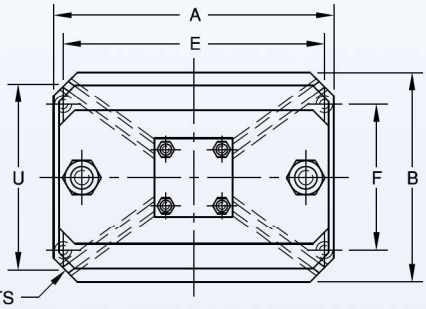




T-8 'T' SLOT

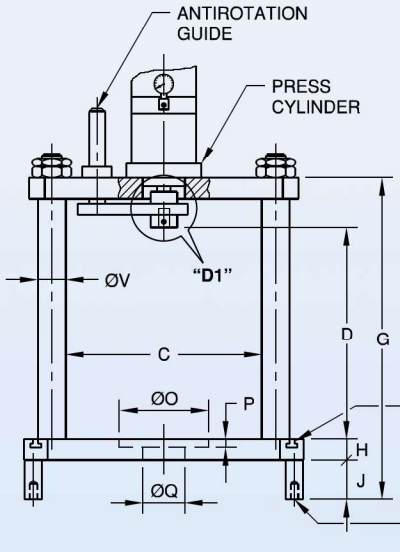


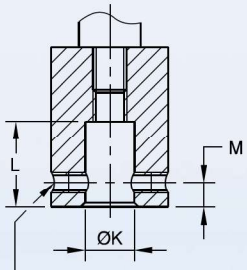

T-10 'T' SLOT

**WITH GUIDED MOVING PLATEN (2P--G)**

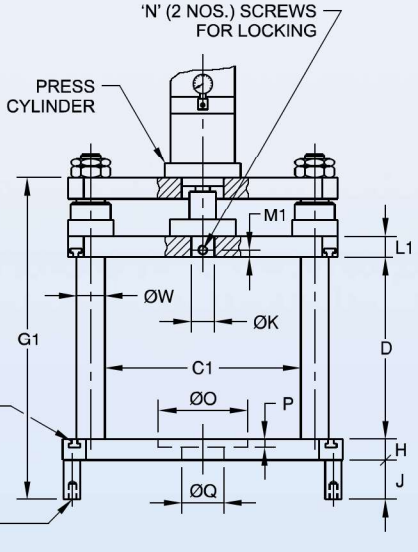



DIAGONAL 'T' SLOTS ON BASE & MOVING PLATES




DETAIL "D1"




DIAGONAL 'T' SLOTS

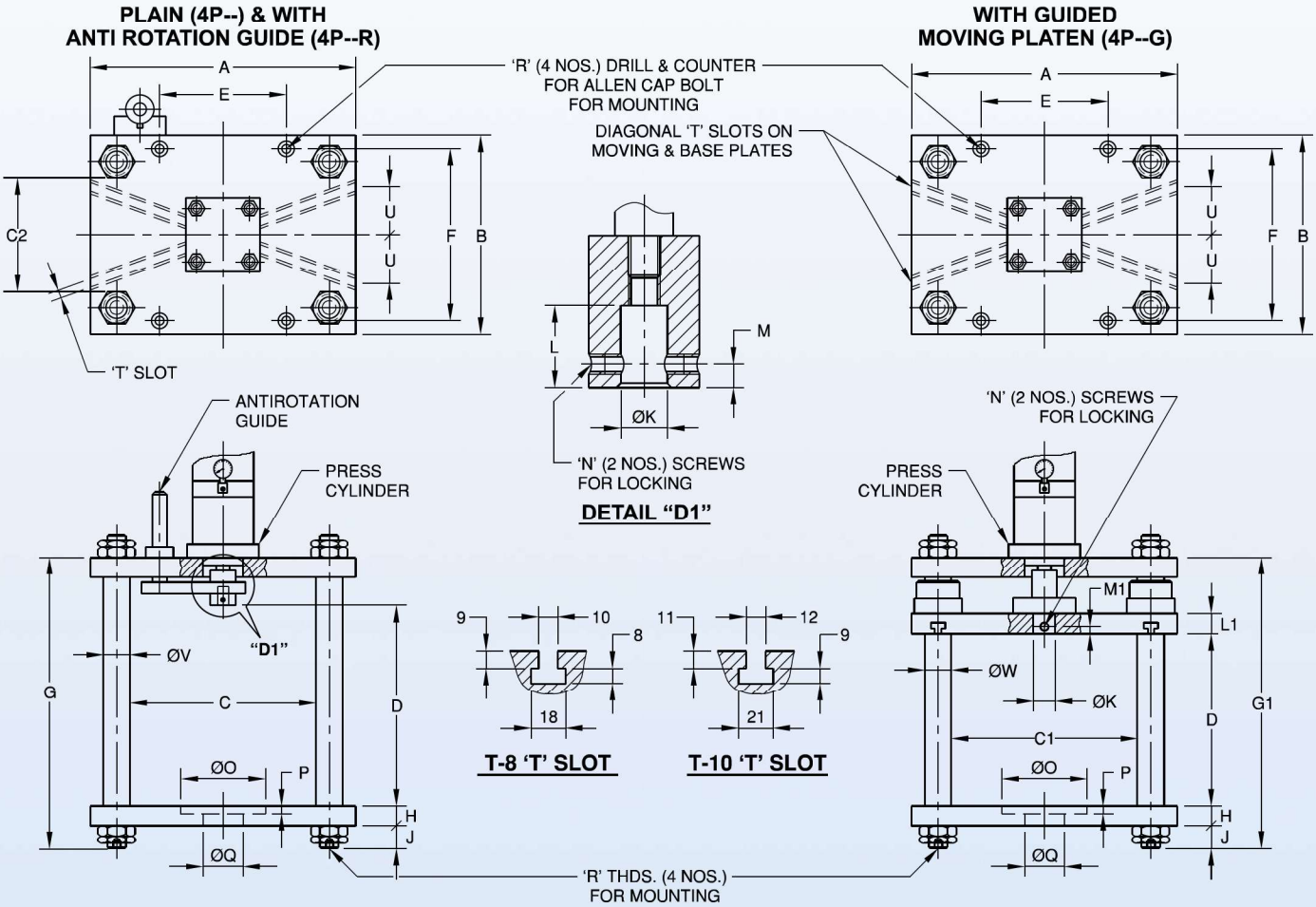
'R' THDS. (4 NOS.) FOR MOUNTING

| PLAIN | WITH ARG | WITH GMP | TON | A | B | C | C1 | D | E | F | G | G1 | H | J | ØK | L | L1 | M | M1 | N | ØO | P | ØQ | R | T | U | ØV | ØW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2P02 | 2P02R | 2P02G | 2 | 350 | 240 | 270 | 270 | 250 | 320 | 160 | 425 | 459 | 38 | 55 | 20 | 25 | 38 | 6 | 10 | M6 | 60 | 18 | 45 | M10 | 8 | 215 | 32 | 32 |
| 2P04 | 2P04R | 2P04G | 4 | 400 | 300 | 300 | 302 | 300 | 364 | 205 | 493 | 534 | 43 | 55 | 25 | 30 | 43 | 10 | 12 | M8 | 75 | 18 | 55 | M12 | 8 | 270 | 40 | 38 |
| 2P08 | 2P08R | 2P08G | 8 | 435 | 300 | 300 | 304 | 300 | 405 | 205 | 513 | 564 | 53 | 55 | 25 | 40 | 53 | 10 | 12 | M8 | 105 | 20 | 75 | M12 | 10 | 265 | 55 | 50 |
| 2P15 | 2P15R | 2P15G | 15 | 510 | 325 | 350 | 352 | 350 | 465 | 215 | 633 | 694 | 68 | 85 | 30 | 60 | 68 | 10 | 12 | M8 | 130 | 25 | 90 | M16 | 10 | 285 | 65 | 63 |
| 2P30 | 2P30R | 2P30G | 30 | 525 | 350 | 350 | 353 | 350 | 480 | 240 | 677 | 765 | 85 | 85 | 40 | 80 | 85 | 12 | 15 | M10 | 130 | 25 | 90 | M20 | 10 | 310 | 76 | 73 |
| 2P45 | 2P45R | 2P45G | 45 | 630 | 400 | 390 | 390 | 400 | 575 | 250 | 796 | 860 | 95 | 100 | 50 | 100 | 95 | 20 | 15 | M12 | 130 | 25 | 100 | M20 | 10 | 350 | 90 | 90 |

Plain

Anti Rotation Guide

Guided Moving Platen



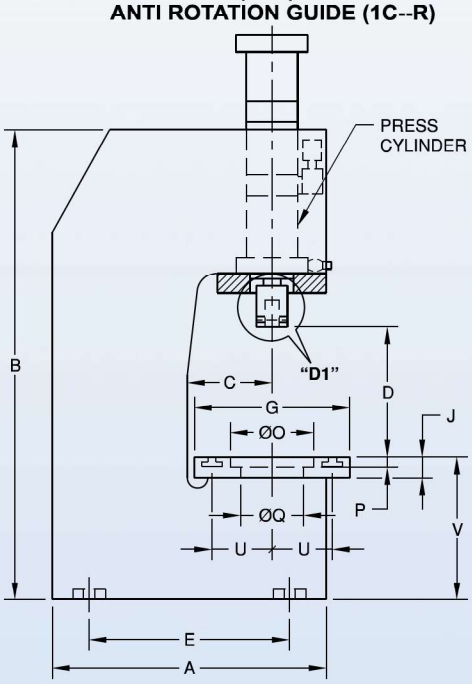

| PLAIN | WITH ARG | WITH GMP | TON | A | B | C | C1 | C2 | D | E | F | G | G1 | H | J | ØK | L | L1 | M | M1 | N | ØO | P | ØQ | R | T | U | ØV | ØW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4P02 | 4P02R | 4P02G | 2 | 340 | 250 | 270 | 270 | 180 | 250 | 200 | 220 | 417 | 445 | 32 | 53 | 20 | 25 | 32 | 10 | 10 | M6 | 60 | 18 | 45 | M10 | 8 | 75 | 30 | 30 |
| 4P04 | 4P04R | 4P04G | 4 | 383 | 300 | 300 | 300 | 217 | 300 | 225 | 270 | 480 | 516 | 38 | 47 | 25 | 30 | 38 | 10 | 12 | M8 | 75 | 18 | 55 | M12 | 8 | 75 | 35 | 35 |
| 4P08 | 4P08R | 4P08G | 8 | 484 | 300 | 350 | 354 | 166 | 300 | 275 | 270 | 513 | 564 | 53 | 55 | 25 | 40 | 53 | 10 | 12 | M8 | 105 | 20 | 75 | M12 | 10 | 75 | 55 | 50 |
| 4P15 | 4P15R | 4P15G | 15 | 500 | 325 | 350 | 350 | 175 | 350 | 275 | 285 | 621 | 677 | 62 | 80 | 30 | 60 | 62 | 10 | 12 | M8 | 130 | 25 | 90 | M16 | 10 | 80 | 60 | 60 |
| 4P30 | 4P30R | 4P30G | 30 | 510 | 350 | 350 | 350 | 190 | 350 | 275 | 310 | 659 | 734 | 72 | 80 | 40 | 80 | 72 | 12 | 15 | M10 | 130 | 25 | 90 | M20 | 10 | 90 | 70 | 70 |
| 4P45 | 4P45R | 4P45G | 45 | 610 | 400 | 400 | 400 | 190 | 400 | 300 | 350 | 786 | 840 | 85 | 100 | 50 | 100 | 85 | 20 | 15 | M12 | 130 | 25 | 100 | M20 | 10 | 85 | 80 | 80 |

Plain

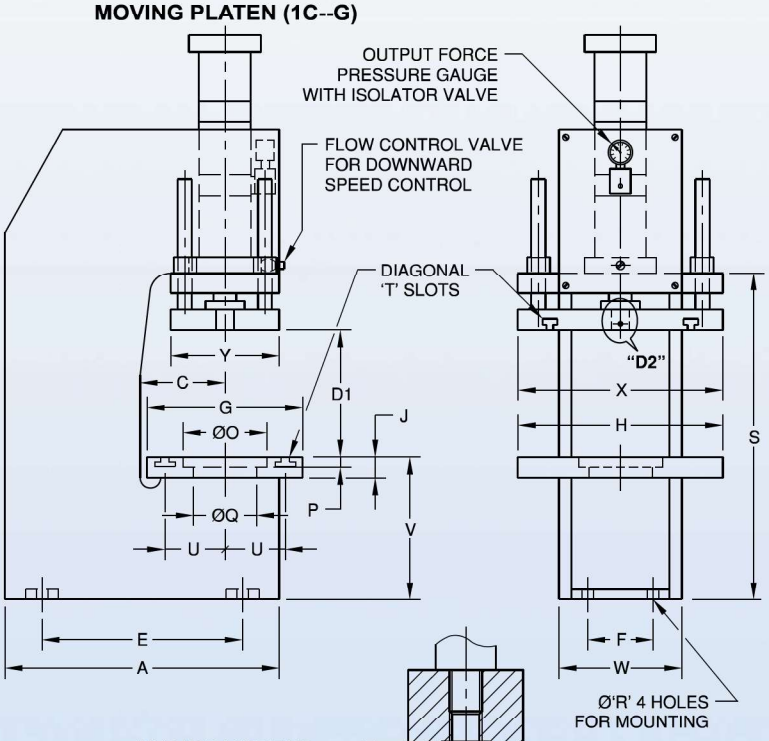
Anti Rotation Guide

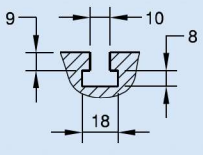
Guided Moving Platen

**PLAIN (1C--) & WITH ANTI ROTATION GUIDE (1C--R)**

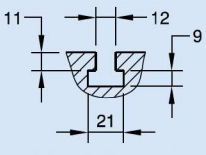



**WITH GUIDED MOVING PLATEN (1C--G)**

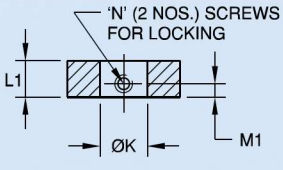


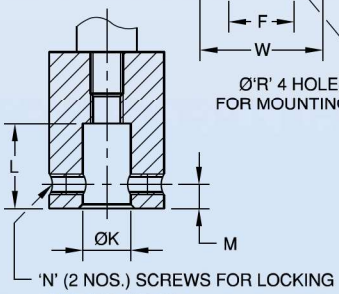

**T-8 'T' SLOT**




**T-10 'T' SLOT**



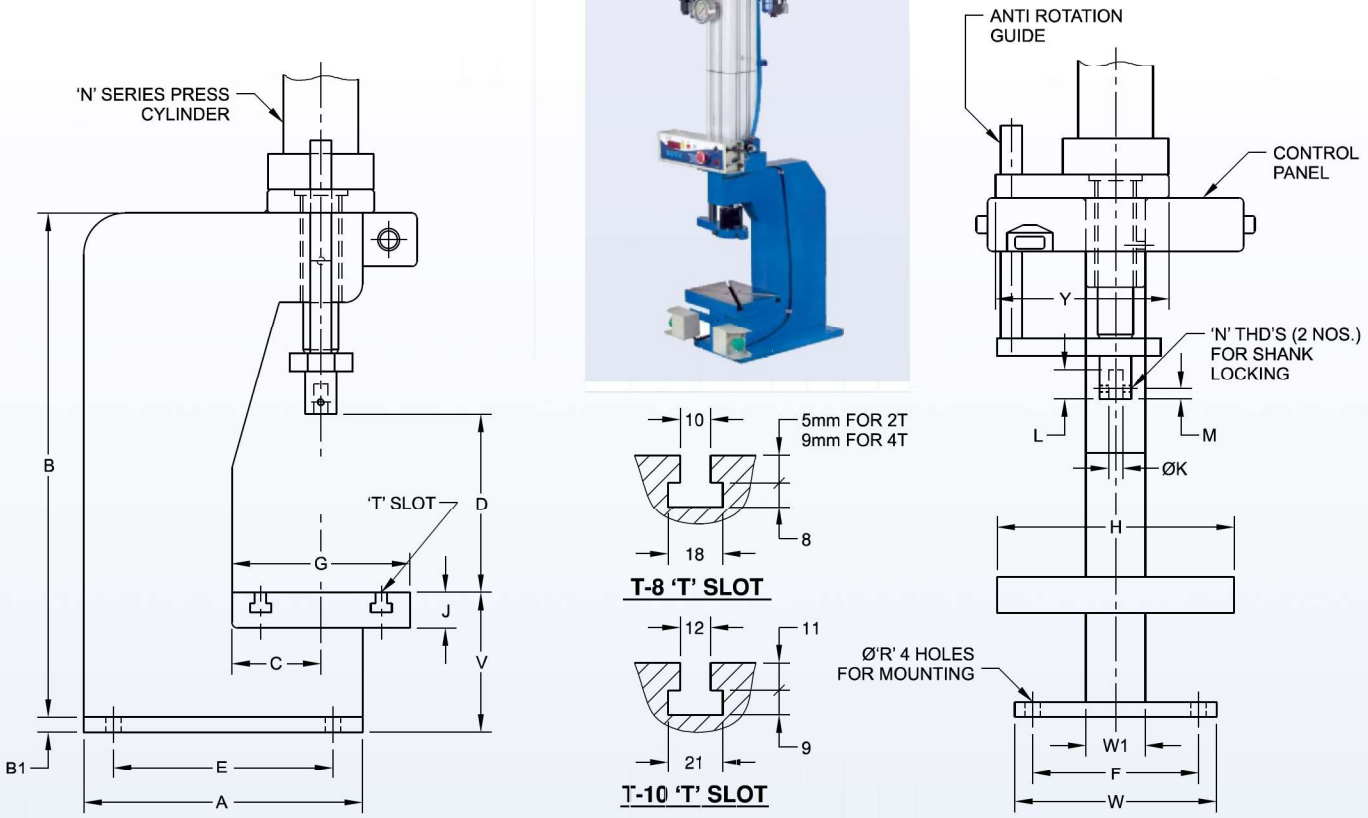

**DETAIL "D2"**




**DETAIL "D1"**

| PLAIN | WITH ARG | WITH GMP | TON | A | B | C | D | D1 | E | F | G | H | J | ØK | L | L1 | M | M1 | N | ØO | P | ØQ | ØR | S | T | U | V | W | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1C02 | 1C02R | 1C02G | 2 | 465 | 767 | 125 | 255 | 221 | 400 | 85 | 230 | 230 | 38 | 20 | 25 | 38 | 6 | 10 | M6 | 60 | 18 | 45 | 13 | 566 | 8 | 75 | 240 | 180 | 266 | 200 |
| 1C04 | 1C04R | 1C04G | 4 | 550 | 890 | 150 | 310 | 270 | 480 | 120 | 280 | 280 | 43 | 25 | 30 | 43 | 10 | 12 | M8 | 75 | 18 | 55 | 13 | 664 | 8 | 100 | 270 | 225 | 337 | 200 |
| 1C08 | 1C08R | 1C08G | 8 | 640 | 984 | 175 | 300 | 250 | 575 | 150 | 330 | 350 | 53 | 25 | 40 | 53 | 10 | 12 | M8 | 105 | 20 | 75 | 13 | 715 | 10 | 100 | 322 | 296 | 408 | 230 |
| 1C15 | 1C15R | 1C15G | 15 | 700 | 1149 | 200 | 350 | 310 | 630 | 150 | 380 | 380 | 62 | 30 | 60 | 62 | 10 | 12 | M8 | 130 | 25 | 90 | 17 | 839 | 10 | 125 | 372 | 311 | 431 | 250 |
| 1C30 | 1C30R | 1C30G | 30 | 750 | 1217 | 200 | 350 | 310 | 680 | 175 | 380 | 380 | 72 | 40 | 80 | 72 | 12 | 15 | M10 | 130 | 25 | 90 | 17 | 892 | 10 | 125 | 397 | 365 | 500 | 250 |
| 1C45 | 1C45R | 1C45G | 45 | 925 | 1266 | 200 | 350 | 341 | 855 | 225 | 380 | 475 | 77 | 50 | 100 | 77 | 20 | 20 | M12 | 130 | 25 | 100 | 17 | 941 | 10 | 125 | 402 | 425 | 560 | 280 |

# Compact 'C' Frame Presses




| MODEL No. | TON | A | B | B1 | C | D | E | F | G | H | J | ØK | L | M | N | R | T | V | W | W1 | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3C02R | 2 | 245 | 437 | 12.5 | 65 | 200 | 200 | 120 | 120 | 150 | 27 | 12 | 30 | 10 | M6 | 13 | 10 | 115 | 150 | 35 | 103 |
| 3C04R | 4 | 345 | 470 | 15 | 75 | 200 | 300 | 170 | 140 | 200 | 35 | 16 | 30 | 10 | M6 | 13 | 10 | 150 | 200 | 50 | 138 |
| 3C08R | 8 | 415 | 545 | 20 | 100 | 250 | 320 | 200 | 180 | 250 | 35 | 25 | 30 | 10 | M6 | 13 | 10 | 180 | 230 | 72 | 184 |
| ✻ 3C15R | 15 | 495 | 630 | – | 100 | 200 | 420 | 100 | 175 | 300 | 50 | 30 | 40 | 10 | M8 | 13 | 10 | 200 | 276 | – | 276 |

✻(Note:-For 3C15R compact 'C' frame press, an 'N' series hydro pneumatic cylinder will be supplied.)

## HOW TO ORDER

| 2P | 02 | R | – | A | H2 | 1 | – | 50 | E | B | – | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

**FRAME TYPE**

| | |
|---|---|
| 2 P | 2 PILLAR |
| 4 P | 4 PILLAR |
| 1C | C FRAME |
| 3C | COMPACT C FRAME |

**TONNAGE**

| |
|---|
| 02 |
| 04 |
| 08 |
| 15 |
| 30 |
| 45 |

**CYL SERIES**

| |
|---|
| A |
| N |
| P |

**SERIES TYPE**

| | |
|---|---|
| - | NIL |
| X | X SERIES |
| H | H SERIES |

**TOTAL STROKE (in mm)**

| |
|---|
| 50 |
| 75 |
| 100 |
| 150 |
| 200 |

**COIL VOLTAGE**

| | |
|---|---|
| NIL | 230 VAC |
| 1 | 24 VDC |

**GUIDE TYPE**

| | |
|---|---|
| - | NIL |
| R | ANTI ROTATION GUIDE |
| G | GUIDED MOVING PLATEN |

**TONNAGE**

| | |
|---|---|
| 01 | 1 TONNE |
| H2 | 2.5 TONNE |
| 04 | 4 TONNE |
| 08 | 8 TONNE |
| 15 | 15 TONNE |
| 30 | 30 TONNE |
| 45 | 45 TONNE |

**POWER STROKE**

| | |
|---|---|
| 0 | 3 MM |
| 1 | 6 MM |
| 3 | 10 MM |
| 4 | 12 MM |
| 5 | 15 MM |
| 6 | 24 MM |

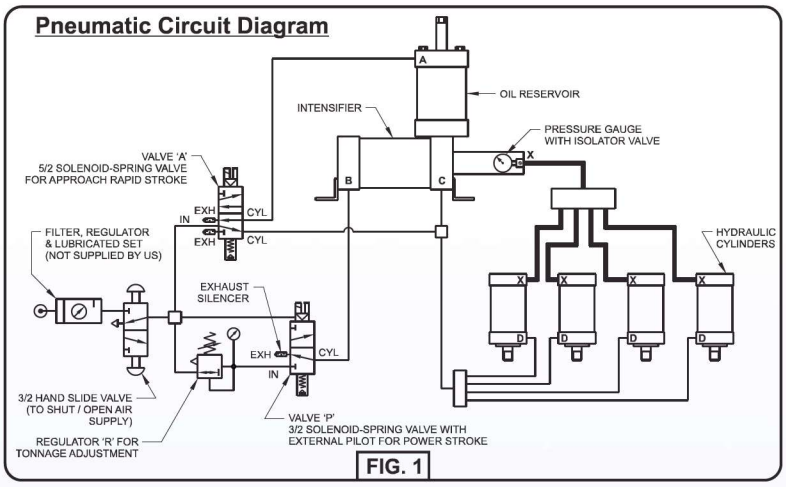
**CONTROLS**

| | |
|---|---|
| E | DIGITAL 2 HAND SAFETY |
| S | SOLENOID CONTROLS |

**OPTIONAL FEATURES**

| | |
|---|---|
| A | AUTO CYCLING OF POWER STROKE |
| B | AUTOMATIC LUBRICATION |
| C | SAFETY LIGHT CURTAIN |
| D | POWER STROKE DEPTH CONTROL |
| FG | FOOT SWITCH WITH GUARD |
| FG2 | HEAVY DUTY FOOT SWITCH |
| J | APPROACH RETURN DEPTH CONTROL |
| K | MANUAL PARKING FEATURE |
| L | LOW ENERGY SYSTEM |
| P | HYDRAULIC PRESSURE SWITCH |
| P1 | PNEUMATIC PRESSURE SWITCH |
| PHN | INCHING FACILITY |
| Q | DUAL FORCE CIRCUIT |
| R | PRESSURE TRANSMITTER |
| T | TIMER OPERATED SOL. FOR POWER STROKE |
| V | PILOT CHECK VALVE |
| Y | TOOL LIFE & COMPONENT SENSING |

# Series 'Z' Hydro Pneumatic Systems




## General Introduction

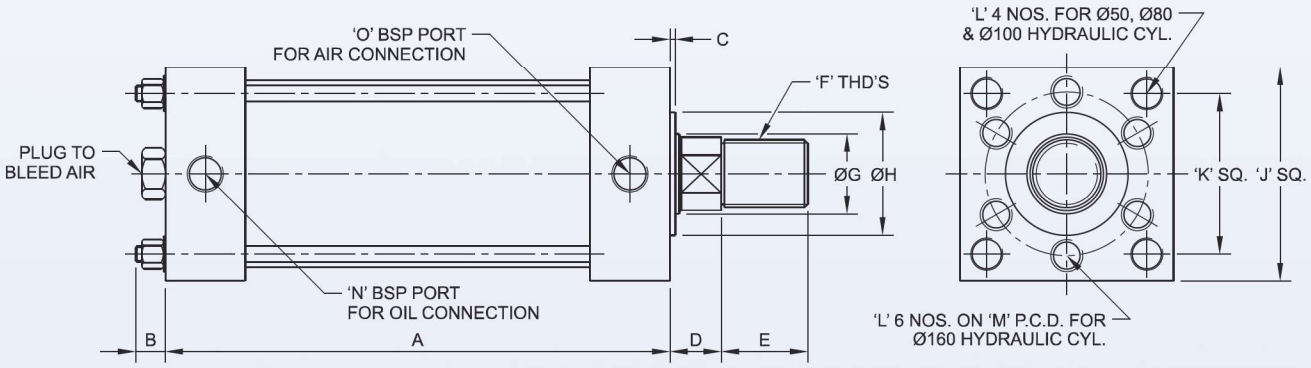
The series 'Z' Hydro Pneumatic System has been developed for the applications where two or more Cylinders have to be operated from a single Reservoir-Intensifier Power unit. They are also useful for applications requiring a large travel under load (large Power Stroke) and for applications where the length of our standard 'N' Series / 'A' Series Hydro Pneumatic Press Systems cannot be accommodated.

The systems consists of :-

(a) An integral Intensifier-Reservoir unit.

(b) Single or several Hydraulic Cylinders connected to the Intesifier-Reservoir unit through suitable high pressure flexible hoses and operated by solenoid valves as shown in circuit Fig. 1.

## HYDRAULIC CYLINDER



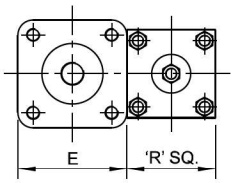

Q = FREE AIR CONSUMPTION PER CYCLE (LITRES).

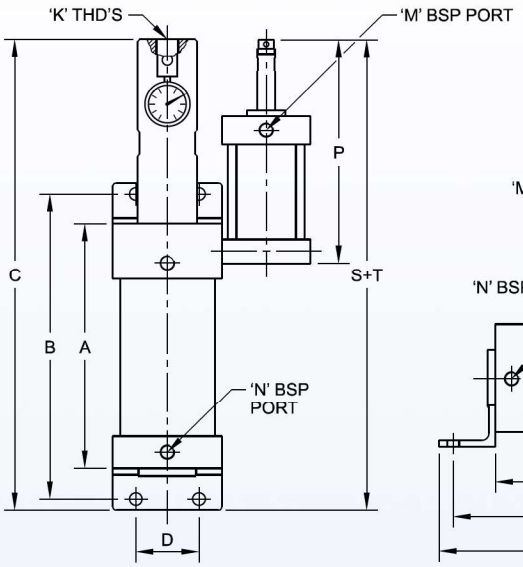
| MODEL | FORCE (Kgf) & 5 BAR | | OIL DISPLACEMENT (cu cm) | | A | B | C | D | E | F | G Ø | H Ø | J | K | L | M | N BSP | O BSP | Q (NLPM) | SEAL KIT No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | APPROACH | RETURN | PER mm TRAVEL | FOR TOTAL TRAVEL | | | | | | | | | | | | | | | | |
| Z50-50 | 98 | 58 | 2 | 100 | 188 | 22 | 4 | 22 | 35 | M24 x 2 | 32 | 45 | 88 | 57 | M16 x 2 | - | 1/2" | 1/4" | 0.35 | 129-014 |
| Z50-100 | 98 | 58 | 2 | 200 | 238 | 22 | 4 | 22 | 35 | M24 x 2 | 32 | 45 | 88 | 57 | M16 x 2 | - | 1/2" | 1/4" | 0.7 | 129-014 |
| Z50-150 | 98 | 58 | 2 | 300 | 288 | 22 | 4 | 22 | 35 | M24 x 2 | 32 | 45 | 88 | 57 | M16 x 2 | - | 1/2" | 1/4" | 1.0 | 129-014 |
| Z50-200 | 98 | 58 | 2 | 400 | 338 | 22 | 4 | 22 | 35 | M24 x 2 | 32 | 45 | 88 | 57 | M16 x 2 | - | 1/2" | 1/4" | 1.4 | 129-014 |
| Z80-50 | 250 | 171 | 5 | 250 | 211 | 25 | 4 | 24 | 35 | M36 x 2 | 45 | 60 | 125 | 86 | M20 x 2.5 | - | 3/4" | 1/4" | 1.0 | 129-015 |
| Z80-100 | 250 | 171 | 5 | 500 | 261 | 25 | 4 | 24 | 35 | M36 x 2 | 45 | 60 | 125 | 86 | M20 x 2.5 | - | 3/4" | 1/4" | 2.0 | 129-015 |
| Z80-150 | 250 | 171 | 5 | 750 | 311 | 25 | 4 | 24 | 35 | M36 x 2 | 45 | 60 | 125 | 86 | M20 x 2.5 | - | 3/4" | 1/4" | 3.0 | 129-015 |
| Z80-200 | 250 | 171 | 5 | 1000 | 361 | 25 | 4 | 24 | 35 | M36 x 2 | 45 | 60 | 125 | 86 | M20 x 2.5 | - | 3/4" | 1/4" | 4.0 | 129-015 |
| Z100-50 | 392 | 269 | 8 | 400 | 223 | 30 | 4 | 24 | 35 | M40 x 2 | 56 | 75 | 155 | 107 | M24 x 3 | - | 3/4" | 1/2" | 1.6 | 129-016 |
| Z100-100 | 392 | 269 | 8 | 800 | 273 | 30 | 4 | 24 | 35 | M40 x 2 | 56 | 75 | 155 | 107 | M24 x 3 | - | 3/4" | 1/2"" | 3.2 | 129-016 |
| Z100-150 | 392 | 269 | 8 | 1200 | 323 | 30 | 4 | 24 | 35 | M40 x 2 | 56 | 75 | 155 | 107 | M24 x 3 | - | 3/4" | 1/2" | 4.8 | 129-016 |
| Z100-200 | 392 | 269 | 8 | 1600 | 373 | 30 | 4 | 24 | 35 | M40 x 2 | 56 | 75 | 155 | 107 | M24 x 3 | - | 3/4" | 1/2" | 6.4 | 129-016 |
| Z160-50 | 1000 | 850 | 20 | 1000 | 238.5 | 45 | 4 | 29 | 40 | M48 x 3 | 63 | 75 | 240 | - | M30 x 3.5 | 135 | 1" | 1/2" | 5.0 | 129-017 |
| Z160-100 | 1000 | 850 | 20 | 2000 | 288.5 | 45 | 4 | 29 | 40 | M48 x 3 | 63 | 75 | 240 | - | M30 x 3.5 | 135 | 1" | 1/2" | 10.0 | 129-017 |
| Z160-150 | 1000 | 850 | 20 | 3000 | 338.5 | 45 | 4 | 29 | 40 | M48 x 3 | 63 | 75 | 240 | - | M30 x 3.5 | 135 | 1" | 1/2" | 15.0 | 129-017 |
| Z160-200 | 1000 | 850 | 20 | 4000 | 388.5 | 45 | 4 | 29 | 40 | M48 x 3 | 63 | 75 | 240 | - | M30 x 3.5 | 135 | 1" | 1/2" | 20.0 | 129-017 |

# INTENSIFIER RESERVOIR UNIT

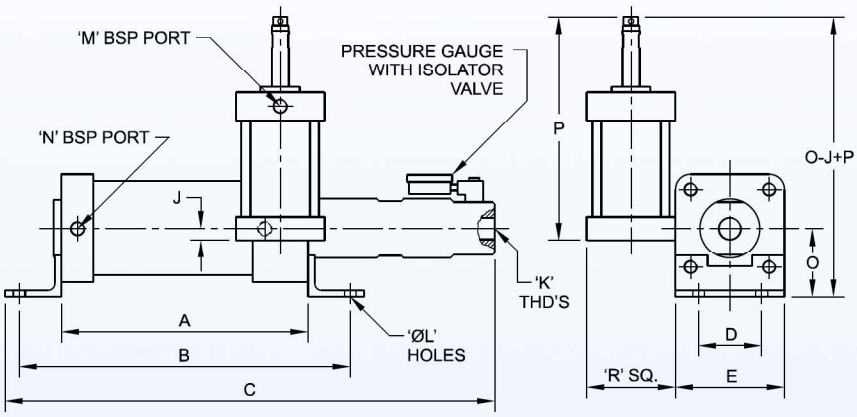
## Reservoir

| MODEL | VOLUMETRIC OIL DISPLACEMENT FOR APPROACH (cu. cm) | P | M BSP | R SQ. | T | Q FREE AIR CONSUMPTION PER CYCLE (NL) | SEAL KIT No. |
|---|---|---|---|---|---|---|---|
| R80-400 | 400 | 323 | 1/4" | 98 | 310 | 2.3 | 129-010 |
| R80-800 | 800 | 483 | 1/4" | 98 | 470 | 4.5 | 129-010 |
| R100-1200 | 1200 | 467 | 1/4" | 118 | 454 | 7.0 | 129-011 |
| R160-2200 | 2200 | 285 | 1/2" | 185 | 267 | 10.8 | 129-012 |
| R160-3000 | 3000 | 505 | 1/2" | 185 | 487 | 18.0 | 129-012 |
| R200-4700 | 4700 | 536 | 1/2" | 227 | 518 | 28.2 | 129-013 |
| R200-6000 | 6000 | 600 | 1/2" | 227 | 582 | 36.1 | 129-013 |




**Vertical Installation**




**Horizontal Installation**

## Intensifier

| MODEL | RATIO | OUTPUT OIL PRESSURE @ 5 BAR | MAX. OIL DISPLACEMENT FOR POWER STROKE cu. cm | TONNAGE FOR HYD. CYL. | | | | A | B | C | D | E | J | K BSP | L Ø | N BSP | O | S | Q FREE AIR CONS. PER CYCLE (NL) | SEAL KIT No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Z 50 | Z 80 | Z 100 | Z 160 | | | | | | | | | | | | | |
| 80-14-200 | 32 | 160 | 27 | 3.1 | 8.0 | 12.5 | X | 347 | 433 | 597 | 63 | 98 | 19 | 1/2" | 12 | 1/4" | 63 | 373 | 11.8 | 129-001 |
| 80-14-400 | 32 | 160 | 57 | 3.1 | 8.0 | 12.5 | X | 547 | 633 | 997 | 63 | 98 | 19 | 1/2" | 12 | 1/4" | 63 | 573 | 23.7 | 129-001 |
| 80-20-200 | 16 | 80 | 55 | 1.5 | 4.0 | 6.2 | X | 347 | 433 | 597 | 63 | 98 | 19 | 1/2" | 12 | 1/4" | 63 | 373 | 11.6 | 129-002 |
| 80-20-400 | 16 | 80 | 117 | 1.5 | 4.0 | 6.2 | X | 547 | 633 | 997 | 63 | 98 | 19 | 1/2" | 12 | 1/4" | 63 | 573 | 23.4 | 129-002 |
| 100-16-200 | 39 | 195 | 35 | 3.8 | 9.8 | 15.3 | X | 353 | 439 | 603 | 75 | 118 | 19 | 1/2" | 14 | 1/4" | 71 | 382 | 18.6 | 129-018 |
| 100-16-400 | 39 | 195 | 75 | 3.8 | 9.8 | 15.3 | X | 553 | 639 | 1003 | 75 | 118 | 19 | 1/2" | 14 | 1/4" | 71 | 582 | 37.2 | 129-018 |
| 100-20-200 | 25 | 125 | 55 | 2.5 | 6.2 | 9.8 | X | 353 | 439 | 603 | 75 | 118 | 19 | 1/2" | 14 | 1/4" | 71 | 382 | 18.4 | 129-003 |
| 100-20-400 | 25 | 125 | 117 | 2.5 | 6.2 | 9.8 | X | 553 | 639 | 1003 | 75 | 118 | 19 | 1/2" | 14 | 1/4" | 71 | 582 | 37.0 | 129-003 |
| 100-28-200 | 12.5 | 64 | 107 | 1.2 | 3.2 | 5.0 | X | 353 | 439 | 603 | 75 | 118 | 19 | 1/2" | 14 | 1/4" | 71 | 382 | 18.1 | 129-004 |
| 100-28-400 | 12.5 | 64 | 230 | 1.2 | 3.2 | 5.0 | X | 553 | 639 | 1003 | 75 | 118 | 19 | 1/2" | 14 | 1/4" | 71 | 582 | 36.2 | 129-004 |
| 160-28-200 | 32 | 160 | 107 | 3.1 | 8.0 | 12.5 | 32.0 | 383 | 513 | 659 | 115 | 185 | 19 | 1/2" | 18 | 1/2" | 115 | 435 | 47.5 | 129-019 |
| 160-28-400 | 32 | 160 | 230 | 3.1 | 8.0 | 12.5 | 32.0 | 583 | 713 | 1059 | 115 | 185 | 19 | 1/2" | 18 | 1/2" | 115 | 635 | 95.0 | 129-019 |
| 160-32-200 | 25 | 125 | 140 | 2.5 | 6.2 | 9.8 | 25.0 | 383 | 513 | 659 | 115 | 185 | 19 | 3/4" | 18 | 1/2" | 115 | 435 | 47.2 | 129-005 |
| 160-32-400 | 25 | 125 | 300 | 2.5 | 6.2 | 9.8 | 25.0 | 583 | 713 | 1059 | 115 | 185 | 19 | 3/4" | 18 | 1/2" | 115 | 635 | 94.5 | 129-005 |
| 160-40-200 | 16 | 80 | 220 | 1.5 | 4.0 | 6.2 | 16.0 | 383 | 513 | 659 | 115 | 185 | 19 | 3/4" | 18 | 1/2" | 115 | 435 | 46.8 | 129-006 |
| 160-40-400 | 16 | 80 | 470 | 1.5 | 4.0 | 6.2 | 16.0 | 583 | 713 | 1059 | 115 | 185 | 19 | 3/4" | 18 | 1/2" | 115 | 635 | 93.5 | 129-006 |
| 200-32-200 | 39 | 195 | 140 | 3.8 | 9.8 | 15.3 | 39.0 | 392 | 532 | 673 | 135 | 227 | 19 | 3/4" | 22 | 1/2" | 115 | 449 | 74.4 | 129-007 |
| 200-32-400 | 39 | 195 | 300 | 3.8 | 9.8 | 15.3 | 39.0 | 592 | 732 | 1073 | 135 | 227 | 19 | 3/4" | 22 | 1/2" | 115 | 649 | 148.8 | 129-007 |
| 200-40-200 | 25 | 125 | 220 | 2.5 | 6.2 | 9.8 | 25.0 | 392 | 532 | 673 | 135 | 227 | 19 | 3/4" | 22 | 1/2" | 115 | 449 | 73.9 | 129-008 |
| 200-40-400 | 25 | 125 | 470 | 2.5 | 6.2 | 9.8 | 25.0 | 592 | 732 | 1073 | 135 | 227 | 19 | 3/4" | 22 | 1/2" | 115 | 649 | 147.6 | 129-008 |
| 200-56-200 | 12.5 | 63 | 430 | 1.2 | 3.1 | 5.0 | 12.7 | 392 | 532 | 673 | 135 | 227 | 19 | 3/4" | 22 | 1/2" | 115 | 449 | 72.5 | 129-009 |
| 200-56-400 | 12.5 | 63 | 923 | 1.2 | 3.1 | 5.0 | 12.7 | 592 | 732 | 1073 | 135 | 227 | 19 | 3/4" | 22 | 1/2" | 115 | 649 | 144.8 | 129-009 |

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