



FLUID POWER SOLUTIONS



TECHNICAL CATALOGUE

HYDRAULICS • HYDRO-PNEUMATICS • PNEUMATICS
CLAMPING DEVICES • WORK HOLDING SOLUTIONS



Year Established: 1972

Quality certification: ISO 9001-2015

Products manufactured: Hydraulic, Hydro-Pneumatic and Pneumatic Cylinders, Systems, Clamping Devices and Work Holding Solutions.

Segments Served: Machine Tool, Rubber & Plastics, Steel Making, Material Handling, Factory Automation, Renewable Energy, Offshore, Municipal and Agriculture equipment.

Business profile: With nearly five decades of experience in the field of Fluid Power, PREAC is a name synonymous with Quality & Reliability. Supported by the latest machinery and testing equipment, PREAC offers a wide range of standard and customized solutions for the discerning customer. The company today represents the highest standards in products and services, ever growing and ever improving its processes to place you right on the top.



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Hydro-Pneumatic Tool De-Clamp Cylinders PCS Series



for Machining Centers (VMC & HMC)

Application

- To provide high thrust over a short stroke using compressed air. Ideal for use where hydraulics is not used or cannot be used. Widely used in machining centers (VMC & HMC).

Priming

- Pressurize chambers C2 & C4. Open the bleed port & pour oil into the reservoir. When oil starts to flow out of bleed port, plug it. The system is primed & ready to use.

Working Principle

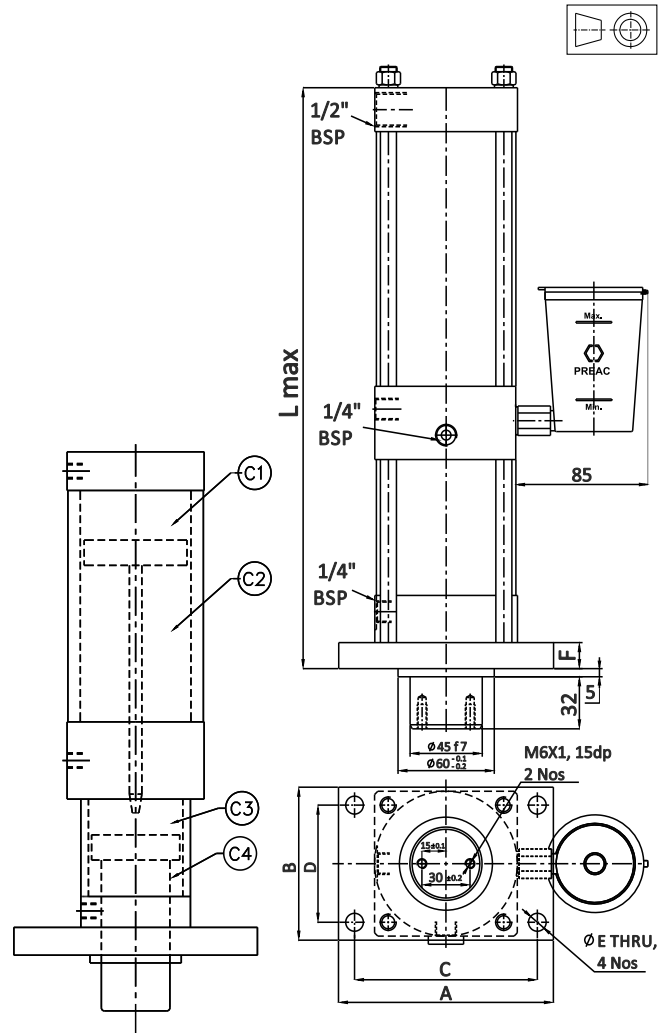
- Compressed air in chamber C1 forces the piston rod into chamber C3 which is primed with oil from the reservoir. As the rod progresses into the sealed area of chamber C3 the oil gets pressurized proportionate to the intensification ratio & this moves the piston rod over the required high pressure stroke. Compressed air is then supplied to chambers C2 & C4 to return both pistons to their original position.

Maintenance

- This unit can operate on dry & filtered air. It is advisable to use lubricated air for longer life. Once lubricated air is used, the unit should not be operated on dry air.
- Oil level in the reservoir should be maintained as marked.
- If excess oil is observed through the valve exhaust ports or oil level in the reservoir drops quickly, there may be a seal failure. If so, replace entire seal kit.

Note

- For horizontal mounting replace 'V' by 'H' in Part number.
- Fully loaded version with valves, limit switches & Air blast can be offered on request.



| SUPPLY SPECIFICATION | | | | | | | | | | | | |
|----------------------|---------------------------|-------------------------|-------------------------|--------------|-----------------|-----|-----|-----|-----|-----|------|----|
| Sl. No. | THEORETICAL THRUST in kgf | | | STROKE in mm | PART No. | L | A | B | C | D | E | F |
| | at 4 kg/cm ² | at 5 kg/cm ² | at 6 kg/cm ² | | | | | | | | | |
| 1 | 2000 | 2500 | 3000 | 9 | PCS3-8045-VC09 | 357 | 134 | 94 | 114 | 72 | 11 | 16 |
| 2 | 2000 | 2500 | 3000 | 13 | PCS3-8045-VC13 | 425 | 134 | 94 | 114 | 72 | 11 | 16 |
| 3 | 2000 | 2500 | 3000 | 16 | PCS3-8045-VC16 | 477 | 134 | 94 | 114 | 72 | 11 | 16 |
| 4 | 3200 | 4000 | 4800 | 9 | PCS4-10045-VC09 | 376 | 154 | 112 | 134 | 90 | 11 | 16 |
| 5 | 3200 | 4000 | 4800 | 13 | PCS4-10045-VC13 | 414 | 154 | 112 | 134 | 90 | 11 | 16 |
| 6 | 3200 | 4000 | 4800 | 16 | PCS4-10045-VC16 | 470 | 154 | 112 | 134 | 90 | 11 | 16 |
| 7 | 5000 | 6250 | 7500 | 9 | PCS5-12545-VC09 | 361 | 200 | 140 | 170 | 110 | 14.5 | 18 |
| 8 | 5000 | 6250 | 7500 | 13 | PCS5-12545-VC13 | 420 | 200 | 140 | 170 | 110 | 14.5 | 18 |
| 9 | 5000 | 6250 | 7500 | 16 | PCS5-12545-VC16 | 468 | 200 | 140 | 170 | 110 | 14.5 | 18 |



Hydro-Pneumatic Tool De-Clamp Cylinders PCT Series



for Machining Centers (VMC & HMC)

Application

- To provide high thrust over a short stroke using compressed air. Ideal for use where hydraulics is not used or cannot be used. Widely used in machining centers (VMC & HMC).

Priming

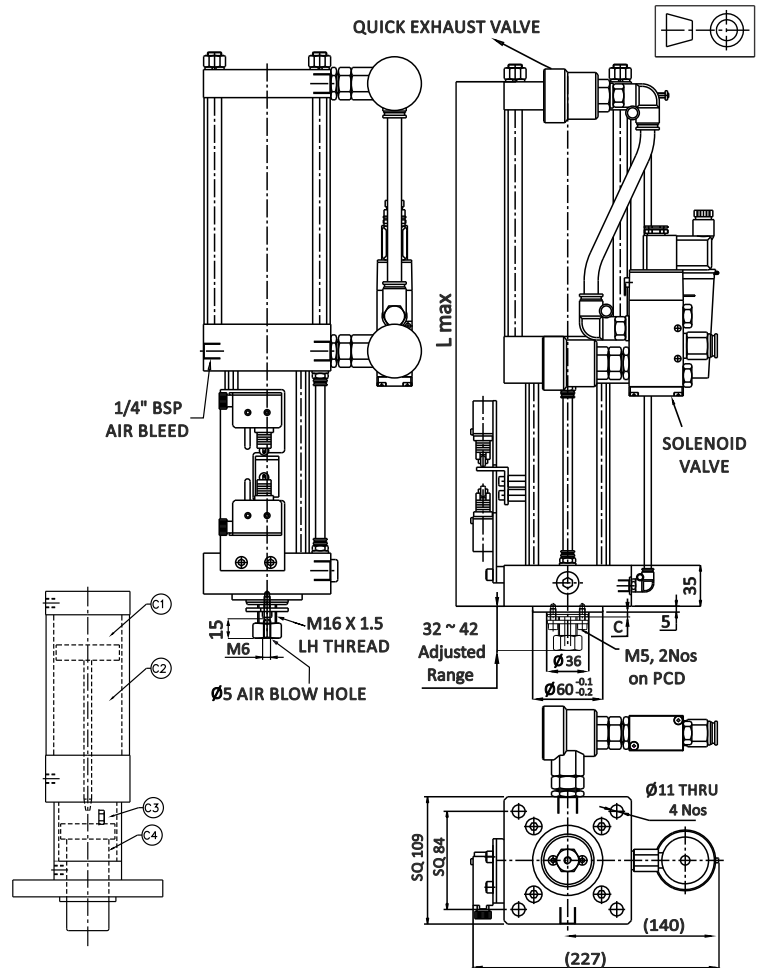
- Pressurize chambers C2 & C4. Open the bleed port & pour oil into the reservoir. When oil starts to flow out of bleed port, plug it. The system is primed & ready to use.

Working Principle

- Compressed air in chamber C1 forces the piston rod into chamber C3 which is primed with oil from the reservoir. As the rod progresses into the sealed area of chamber C3 the oil gets pressurized proportionate to the intensification ratio & this moves the piston rod over the required high pressure stroke. Compressed air is then supplied to chambers C2 & C4 to return both pistons to their original position.

Maintenance

- This unit can operate on dry & filtered air. It is advisable to use lubricated air for longer life. Once lubricated air is used, the unit should not be operated on dry air.
- Oil level in the reservoir should be maintained as marked.
- If excess oil is observed through the valve exhaust ports or oil level in the reservoir drops quickly, there may be a seal failure. If so, replace entire seal kit.

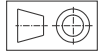


SUPPLY SPECIFICATION

| Sl. No. | THEORETICAL THRUST in kgf | | | STROKE in mm | PART No. | L | C |
|---------|---------------------------|-------------------------|-------------------------|--------------|-----------------|-----|---|
| | at 4 kg/cm ² | at 5 kg/cm ² | at 6 kg/cm ² | | | | |
| 1 | 1562 | 1943 | 2343 | 11 | PCT2-10036-VC11 | 354 | 6 |
| 2 | 1562 | 1943 | 2343 | 13 | PCT2-10036-VC13 | 364 | 4 |
| 3 | 1960 | 2450 | 2940 | 11 | PCT3-10036-VC11 | 367 | 6 |
| 4 | 1960 | 2450 | 2940 | 13 | PCT3-10036-VC13 | 381 | 4 |
| 5 | 1960 | 2450 | 2940 | 15 | PCT3-10036-VC15 | 397 | 2 |
| 6 | 1960 | 2450 | 2940 | 17 | PCT3-10036-VC17 | 410 | 0 |
| 7 | 3062 | 3828 | 4593 | 13 | PCT4-10036-VC13 | 449 | 4 |
| 8 | 3062 | 3828 | 4593 | 15 | PCT4-10036-VC15 | 491 | 2 |
| 9 | 3062 | 3828 | 4593 | 17 | PCT4-10036-VC17 | 533 | 0 |
| 10 | 4000 | 5000 | 6000 | 13 | PCT5-10036-VC13 | 513 | 4 |
| 11 | 4000 | 5000 | 6000 | 15 | PCT5-10036-VC15 | 559 | 2 |
| 12 | 4000 | 5000 | 6000 | 17 | PCT5-10036-VC17 | 607 | 0 |



Hydro-Pneumatic Intensifiers for Machining Centers (VMC & HMC)



Description

- The Hydro-Pneumatic Intensifier consists of a double acting Pneumatic cylinder & a hydraulic high pressure chamber. The Pneumatic cylinder piston rod is forced into the hydraulic chamber resulting in high pressure oil displacement.

Application

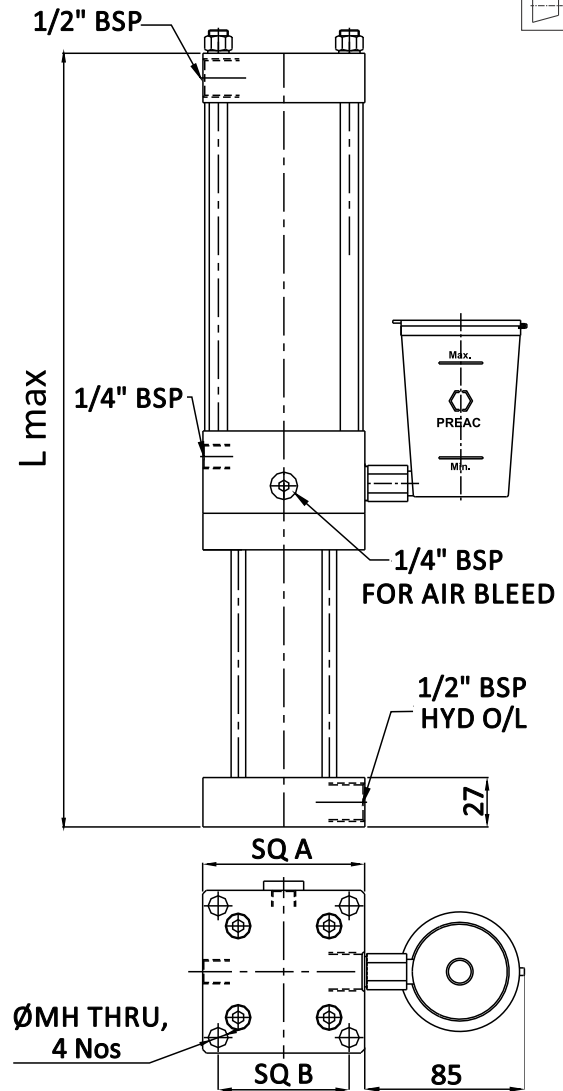
- For actuating the Tool De-clamping cylinders in machining centers.

Operation

- When compressed air is allowed into the positive chamber of the Pneumatic cylinder, oil in the hydraulic side gets pressurized and is forced out. This oil operates the clamping cylinders. After changing the direction of air, the pneumatic piston returns and the job gets de-clamped.

Important Notes

- Output pressure should not exceed 175 kg/cm^2
- This can be used to operate only single acting cylinders.
- For seal kits, add Prefix SK to part No.
- All dimensions are in mm.
- Overall dimensional tolerance $\pm 0.5 \text{ mm}$.



| SUPPLY SPECIFICATION | | | | | | | | |
|----------------------|--------------|-----------------------|------------------|-----|-----|-----|----|---|
| Sl. No. | PART No. | INTENSIFICATION RATIO | OIL OUTPUT in cc | L | A | B | MH | OUTPUT PRESSURE @ 4 kg/cm ² AIR PRESSURE |
| 1 | 1330-040-050 | 01:10 | 50 | 425 | 89 | 72 | 11 | 40 |
| 2 | 1330-040-100 | 01:10 | 100 | 625 | 89 | 72 | 11 | 40 |
| 3 | 1330-064-050 | 01:16 | 50 | 425 | 112 | 88 | 13 | 64 |
| 4 | 1330-064-100 | 01:16 | 100 | 625 | 112 | 88 | 13 | 64 |
| 5 | 1330-100-050 | 01:25 | 50 | 425 | 140 | 109 | 15 | 100 |
| 6 | 1330-100-100 | 01:25 | 100 | 625 | 140 | 109 | 15 | 100 |



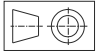
Hydro-Pneumatic Intensifiers

Double Acting



Type-1

Type-2



Description

- The Hydro-Pneumatic Intensifier consists of a double acting Pneumatic Cylinder and a high pressure hydraulic chamber. The Pneumatic Cylinder piston rod is forced into the hydraulic chamber resulting in high pressure oil displacement.

Principle

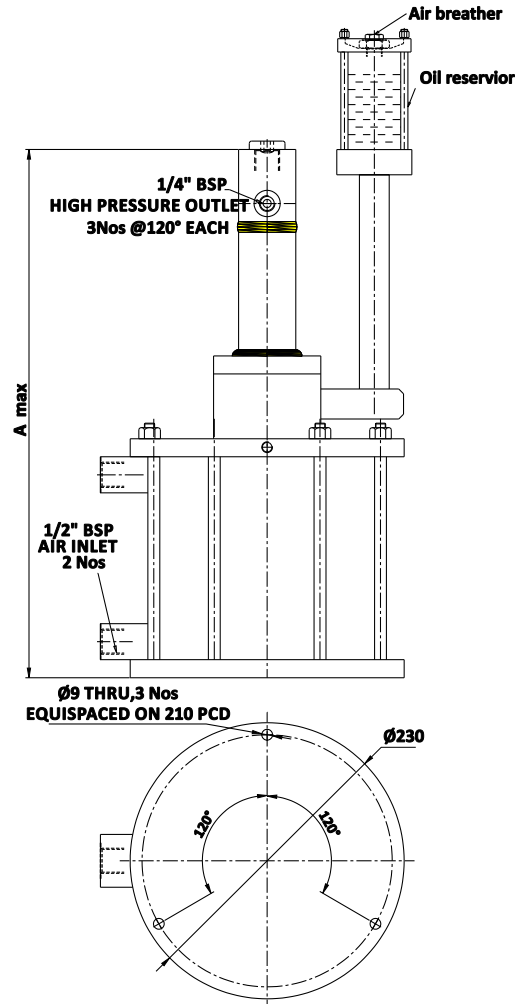
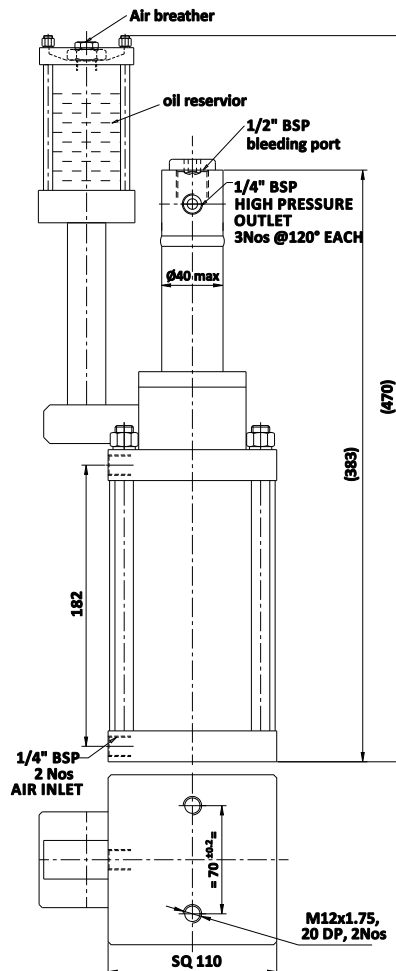
- In the static condition, (Pressure x Area) at air side is equal to (Pressure x Area) at oil side

Operation

- When air is allowed into the positive chamber of the Pneumatic Cylinder, oil on the hydraulic side gets pressurized and is forced out. This oil operates the clamping cylinders. After changing the direction of air the pneumatic piston returns and the job gets declamped.

Important Notes

- Output pressure should not exceed 210 kg/cm²
- This can be used to operate only single acting cylinders.
- For seal kits, add prefix SK to part no.



- All dimensions are in mm
- Overall dimensional tolerance ± 0.5 mm

| SPECIFICATIONS FOR TYPE-1 | | | |
|---------------------------|-----------------------|-----------------|------------------|
| Sl.No. | INTENSIFICATION RATIO | OIL OUTPUT (cc) | STANDARD PART No |
| 1 | 1:32 | 26 | 6110-103 |

| SPECIFICATIONS FOR TYPE-2 | | | | |
|---------------------------|-----|-----------------------|-----------------|--------------------|
| Sl.No. | A | INTENSIFICATION RATIO | OIL OUTPUT (cc) | STANDARD PART No's |
| 1 | 560 | 1:64 | 40 | 6110-204 |
| 2 | 560 | 1:40 | 75 | 6110-208 |
| 3 | 560 | 1:28 | 100 | 6110-210 |
| 4 | 875 | 1:40 | 150 | 6110-215 |
| 5 | 875 | 1:28 | 200 | 6110-220 |
| 6 | 875 | 1:15 | 400 | 6110-240 |



Hydraulic Intensifiers

Double Acting



Description

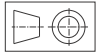
- A Hydraulic Intensifier is used to boost the low pressure output of a hydraulic power unit. The high pressure output of the intensifier is used in clamping devices.

Important Notes

- The system should be designed to avoid creation of vacuum in the lines.
- Air should be thoroughly bled (removed) from the system before operation and at regular intervals.

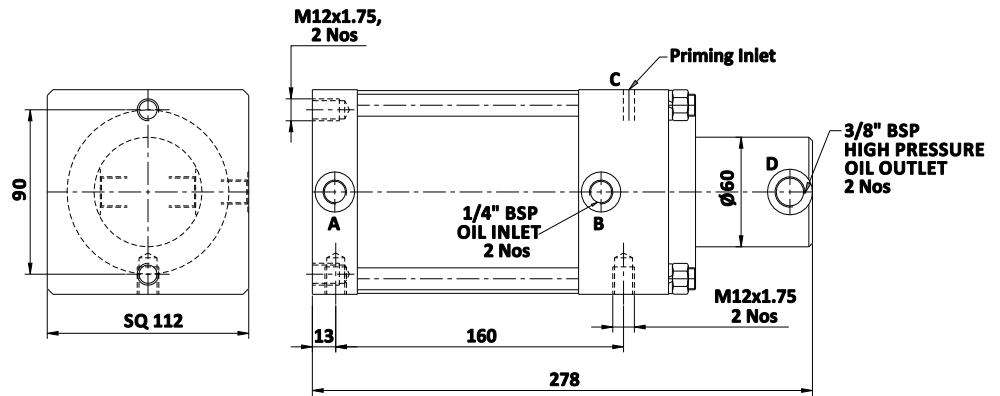
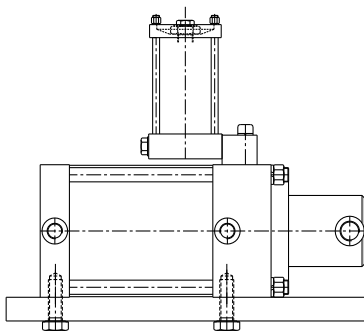
Features

- Type: Double Acting
- Max. Input pressure : 40 kg/cm²
- Intensification ratio : 1:5



Mounting Arrangements

Horizontal Mounting



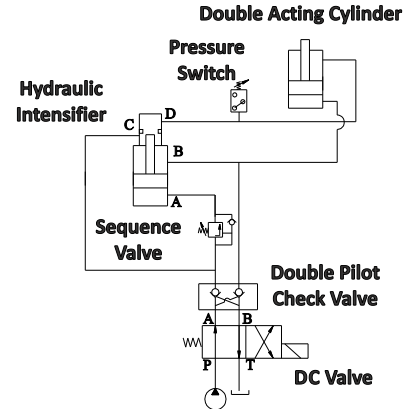
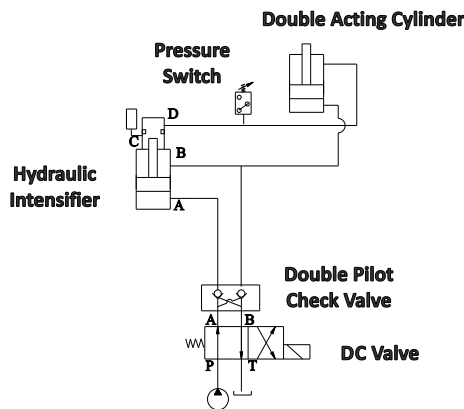
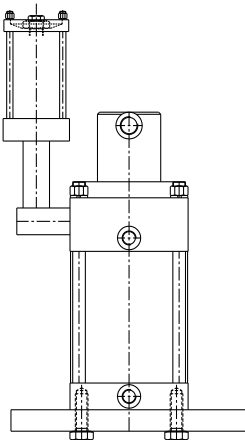
Hydraulic Circuit-1

(Reqd. oil volume < Intensifier oil output)

Hydraulic Circuit-2

(Reqd. oil volume > Intensifier oil output)

Vertical Mounting



SPECIFICATIONS

| Sl.No. | MAX. INPUT PRESSURE (kg/cm ²) | INTENSIFICATION RATIO | OIL OUTPUT (cc) | WEIGHT (kg) | STANDARD PART No's |
|--------|---|-----------------------|-----------------|-------------|---|
| 1 | 40 | 1:5 | 80 | 15 | 6210-100 (Horizontal Mounting with Reservoir) |
| 2 | 40 | 1:5 | 80 | 15 | 6210-200 (Vertical Mounting with Reservoir) |
| 3 | 40 | 1:5 | 80 | 15 | 6210-300 (Universal Mounting without Reservoir) |

- All dimensions are in mm
- Overall dimensional tolerance ± 0.5 mm

ISO 9001-2015 -CERTIFICATION

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1637156**

Certificate Holder: **Precision Engineering Accessories**

SB 109, 2nd Cross, 1st Stage, Peenya Industrial Estate,
Peenya, Bangalore – 560 058, Karnataka, India

Scope: Design, Development, Manufacture and Supply of Hydraulic,
Hydro-Pneumatic and Pneumatic Cylinders, Systems, Clamping
Devices and Work Holding Solutions

Proof has been furnished by means of an audit that the
requirements of **ISO 9001:2015** are met.

Validity: The certificate is valid from **2019-07-09** until **2022-07-04**.
First certification 2013

2019-07-09



TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln



PRODUCT APPLICATIONS



Hydraulic Presses



Material Handling



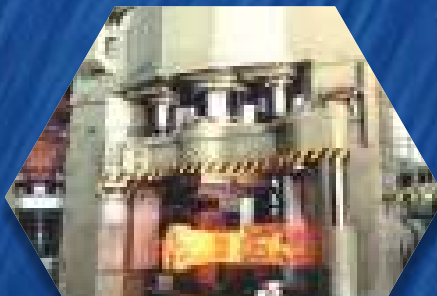
Factory Automation



Steel Mills



Marine and Mining



Metal Forming



Injection Moulding



Tractor & Farm Equipment



Metal Cutting