

## TECPOS CYLINDER INSTRUCTIONS



# TECPOS

For your safety, please read this manual thoroughly before operating your cylinder.

George Taylor & Co. bear no responsibility for personnel injury or damages of the product due to misuse, neglect, attempt to repair, unauthorized alteration or modification by your intentional use.

## FOREWORD

The information in this manual is provided for the proper handling, operating, maintenance & general troubleshooting for **Single Acting Cylinder - TS Series**.

The cylinder has been designed with safety as a primary consideration and being the most efficient of the cylinders under your intended use, in accordance with the procedure detailed in this manual.

Before attempting to operate or service the product, carefully read this manual thoroughly and understand fully for your own safety and the efficiency of the product.

**This manual and any other documents supplied with this product, are the property of TECPOS which reserves all right. They may not be reproduced in whole or in part, without prior written approval from TECPOS.**

**The product warranty will be void if any modifications to the product or using non-compatible oil is carried out without prior written approval from TECPOS.**

**TECPOS reserves the right to make changes to this manual contents described in it without notice. All specifications and information concerning products are subject to change without notice.**

## SAFETY WARNINGS

Safety warnings are defined in this manual as 'Danger', 'Warning', 'Caution'. These regulations should be observed to ensure the prevention of personnel injury and damages or malfunctions of the product.

Please pay attention to 'Danger', 'Warning' & 'Caution' signs, since they may indicate a potential hazard that may result in death, serious personal injuries or damages to the cylinder.

### **DANGER**

Indicates an imminent hazardous situation which if not avoided, will result in death or serious injury.

### **WARNING**

Indicates a potential hazardous situation which if not avoided, will result in death or serious injury.

### **CAUTION**

Indicates a potential hazardous situation which if not avoided, will result in minor or moderate injury, or alerts against unsafe damage of the product.

**The information in this publication does not cover all hazardous incidents unexpected. The manufacturer is not liable for incidental or consequential damages in connection with its incorrect use and not fully understanding the safety instructions mentioned in this manual, this is to be liable on user's responsibility.**

## WARRANTY

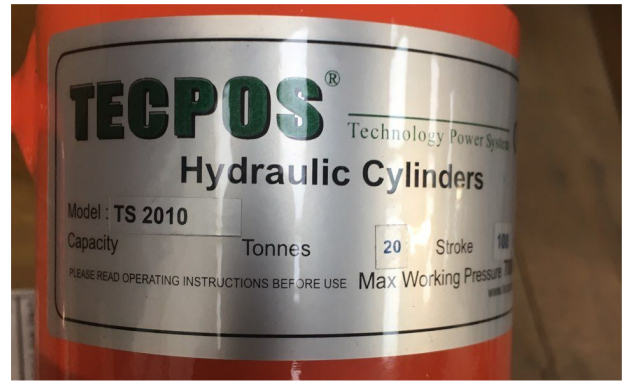
- **George Taylor & Co.** guarantees all materials against defects in workmanship and any faulty parts for 6 months from delivery.
- That guarantee is limited to free replacement and subassembly which has failed due to poor quality manufacturing errors.
- All claims must be supported by evidence that the failure has occurred within the warranty period.
- Only genuine **TECPOS** approved parts and oils, must be used.
- The product warranty will be void if any modification to the product is carried out without prior written approval from **TECPOS**.

## FOR THIS MANUAL

The information in this manual is provided for reference and is believed to be accurate and complete. Tecpos. is not liable for incidental or consequential damage in connection with furnishing or use of the information in this manual, including but not limited to:

- Before each intervention on this product or unpacking, read this manual and understand fully before use.
- This manual should be read and understood fully before initial start up / operating / servicing the product by the assigned person to work the product.
- This manual can be used to assist/prepare on training of personnel, for proper and safer product operation & higher operation efficiency as well as constant maintenance of the product.
- The personnel assigned to work on the product, read this manual very carefully and make sure you fully understand before handling/operating. If more than operator is used, each operator shall be aware of the contents of this manual.
- The manufacturer does not have any responsibility for damage to the product itself or injuries to the user arising out of it's incorrect use and not fully understanding the safety instructions described in this manual.
- This manual should be available to serve as a reference document for everyone who can see with ease, in an easily accessible location nearby the product that is in operation.
- To ensure the manual can always be read with ease, it is recommended that the manual is to always be kept in a very clean condition. If the condition of the manual is not clean or readable, you must advise your superior for corrective action.
- If this manual is not understood fully by the assigned person to the product, it has to be informed by your supervisor for corrective action.

Product label on the product.



## 2.4.1 - OBSERVATIONS FOR LABEL

- The label is in appropriate size and colours containing the specified information of the rating of the product.
- Keep label clean so that operator can read them easily. If the label becomes soiled, clean it immediately.
- Never remove the label and if the label does come off, re-affix it at the original position.
- Label contains critical information which must be strictly observed by all operators, if failure to keep this information, could be unexpected serious accidents.
- If critical information on the label is not understood, please advise your supervisor for corrective action.

## 2.6 - KEEP THE FOLLOWING OBLIGATION

1. This product is completely assembled and tested/inspected at manufacturers factory before shipping to GT.
2. All procedures in this manual must be carried out by properly trained and informed personnel only for this product.
3. Never damage, remove or relocate any parts of the safety devices and protective components without permission from TECPOS, doing so could result in serious personal injury or death.
4. Do not operate the cylinder if it appears to be running abnormally.
5. Never place your hands or feet nearby the cylinder during use, as it can result in serious injury if poor care is taken.
6. The manual should be kept in a well known and easy access area in order for everyone to access it when required.
7. Never modify the product in any way as it voids warranty automatically and may decrease the safety of the product which will put yourself and others at risk of serious injury.
8. Keep in mind the label indications on the product.
9. The safety instructions inside this manual must be obliged strictly by the user operating the product.
10. If you find the product to be malfunctioning, or not operating as it should; put out of use immediately in a safe manner and contact your supervisor on corrective action.
11. **Do not** ever use the item, if its operations appear to be malfunctioning.
12. **Do not** attempt to service/repair the malfunctioned product without the qualified technician trained by **TECPOS**.

## PRODUCT SPECIFICATION

### 3.1 - Application

This, Single Acting Cylinder, as Hydraulic Cylinder, is intended for lifting work when you lift an object of heavy weight on; bridge construction, shipbuilding industry, construction work, etc.

This, Single Acting Cylinder can be connected with high pressure hose, hand pump or hydraulic motor pump and will be operated for its purpose.

This cylinder should not be used for other intended purpose against the specified application on this manual.

### 3.2 - Characteristics of a Single Acting Cylinder

#### 3.2.1 - Specifications

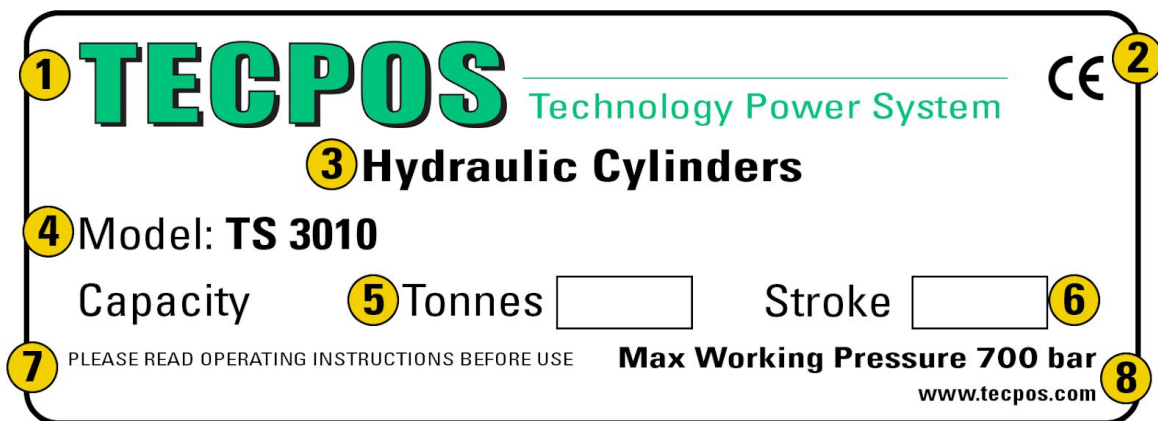
Model	Cylinder Capacity (tons)	Stroke (mm)	Cylinder Effective Area (cm <sup>2</sup> )	Oil Capacity (cc)	Weight (kgs)
TS-55	5	50	6.38	35	1.1
TS-510		100		70	1.4
TS-515		150		106	1.8
TS-520		200		140	2.2
TS-105	10	50	15.2	76	2.1
TS-1010		100		152	3.4
TS-1015		150		228	4.8
TS-1020		200		304	5.6
TS-205	20	50	33.18	166	7
TS-2010		100		442	8.8
TS-2015		150		498	11
TS-2020		200		664	12.7
TS-305	30	50	44.18	220	9.8
TS-3010		100		440	12.5
TS-3015		150		660	16
TS-3020		200		880	17.5
TS-505	50	50	70.88	355	15.8
TS-5010		100		710	20
TS-5015		150		1070	23.5
TS-5020		200		1425	27.7
TS-1005	100	50	132.7	664	18
TS-10010		100		1330	38.8
TS-10015		150		1991	49.2

## Understanding the Model No: TS-55

- T - TECPOS
- S - Single - Acting
- 5 - Capacity, 5 ton
- 5 - Stroke, 50mm

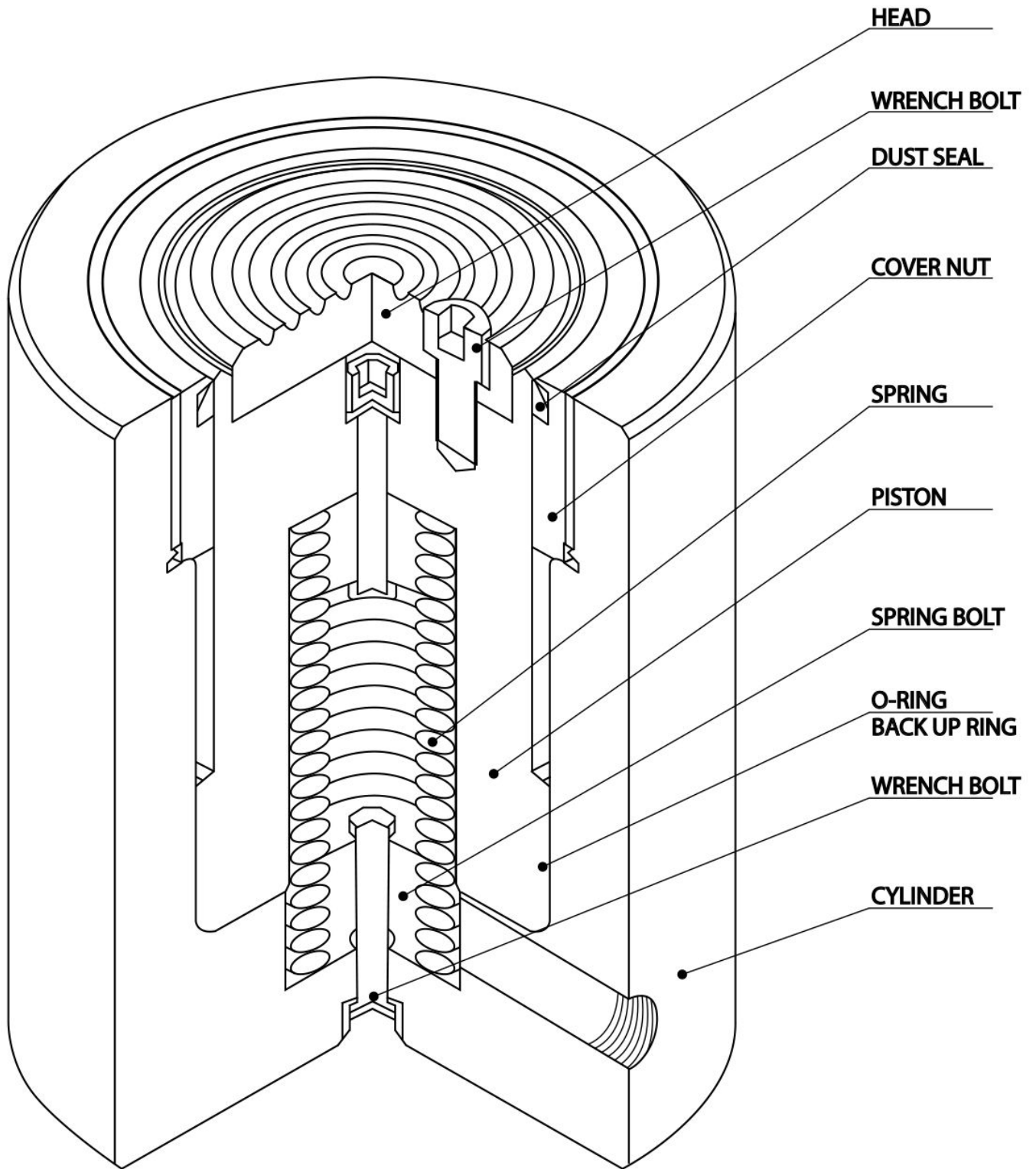
### 3.2.1 - Check the specification on label of the product

The capacity, stroke & maximum pressure of cylinder are described on label.



1. Name of brand
2. CE approval of product
3. Name of product
4. Model reference
5. Capacity of item
6. Stroke of item
7. Read operating instructions before using the item
8. Maximum working pressure

## BREAKDOWN DIAGRAM



## TRANSPORTATION & INSTALLATION

### 4.1 - Transportation

1. The overall weight of the product per model is to be indicated previous "3.2 Characteristics of Single Acting Cylinder, 3.2.1 Specifications" in this manual and this is to refer to transportation work.

2. The transporting process requires at least, more than two people for the heavyweight, more than 25 Kgs of product. If not, you can be severely injured or crushed during transportation work.
3. In case of using a wooden packing with several products, using a forklift having sufficient capacity in order to lift the wooden packing safely.

## **4.2 - Installation and Storage environment**

Install the product under the below environmental condition.

1. Inspect the product visually during unpacking process whether being damaged or not.
2. If you find a damaged product, you can contact the supplier for instructions.
3. Install the product on the place where you can avoid rain or snow.
4. Store the product within a clean condition.
5. Keep away the product from exposing sea water, rain water or moisture and store the product at a place with fresh air condition under sealing with a vinyl.
6. The cylinder should be installed on the flat and even ground and fixed securely at the place to be operated. Especially, the bottom of cylinder should be put on even ground and working. Do not weld or modify the cylinder in order to join into the floor or attach at the other supporting structure.
7. The installation work should be stopped on abnormal and unsafe operation arising out of installation working.

## **4.3 - Installation procedure**

1. Place the object of heavy weight on the centre of plunger of cylinder. When the object of heavy weight is not put on the centre, the cylinder may be damaged seriously. Also, the object of heavy weight may be slipped and then fallen, it may result in severe incident.
2. When connecting the cylinder with the hydraulic hose, the coupler female setting nut should be connected to the male of the hose completely.

# **OPERATION**

## **5.1 - Ascertain the below items before operation**

1. Ascertain the condition of cylinder installation before lifting work whether safety or not.
2. Check the specifications on the label of cylinder with actual condition.
3. Check the connecting condition of the connecting devices.

## **WARNING**

**Wrong specifications and connecting, this is to be damaged to to the cylinder as well as yourself.**



## 5.2 Trail pressure test performance on factory

1. This product is completely assembled and tested/inspected finally in the factory before despatch to distributing warehouse.
2. The testing value is 700 kg.f/cm<sup>2</sup>.

View of pressure test



**View of pressure test**



**View of pressure test gauge**

## 5.3 - Safety precautions on cylinder running

Wear personnel protective equipment properly such as gloves, steel toe cap shoes when using hydraulic equipment, otherwise injury by hydraulic oil may be caused.

Keep hydraulic tools arranged clearly on using the tools.

Keep away your hands and feet from the working area of cylinder working, otherwise it may result in death or serious injury.

Do not over the specified capacity of cylinder described on this manual, refer to "3. Information of product, 3-1 Specification", on cylinder working. Otherwise, this results in severe incidents. This cylinder is designed originally with the maximum pressure of 700 Kg.f/cm<sup>2</sup>.

Do prevent the hydraulic hose from damage. The hydraulic hose should not be twisted or folder on flowing oil through the hose. If the hose is twisted or folder, it may result in severe back pressure, damage to hose, short the life of hose or breakage inside hose.

Do not put on object of heavy weight on the hose. It may be easy to break the steel wire inside the hose. If the damaged hose is pressed by applying pressure, it may be the hose cut.

On moving the hydraulic equipment to the other place, do not take hold of hose or coupler. Use the handle for carrying or the way for safety carrying.

Do not place the hydraulic equipment near open flames or overheating areas. The packing and sealing inside the cylinder with soften and then cause oil leakage. The heating will weaken the hose itself and materials inside the hose.

Do not touch your skin after using working oil. The oil out of the cylinder may seep into your skin and may result in severe injury. Ensure any oil residue is completely cleaned off your skin after use, as if left on can be hazardous to your health. If health is affected from poor care when working with oil, seek medical attention.

The hydraulic cylinder should be operated only under assembling the system completely. In case of not connecting the coupler, the cylinder should not be operated. If the cylinder is given a high load, it may result in occurring severe incidents.

Ascertain the condition of cylinder installation before lifting work whether safety or not.

The cylinder should be installed on the flat and even ground and fixed securely at the place to be operated. Especially, the bottom of cylinder should be put on the even ground and working. Do not weld or modify the cylinder in order to join into the floor or attach at the other supporting structure.

Ensure worn parts are exchanged with new Tecpos parts immediately before putting cylinder back into use. When the parts are exchanged they must be genuine Tecpos parts approved by the manufacturing factory.

Do not use the electrical pump under explosive environmental condition. The electrical pump should be installed and transformed by the electrical technician only.

The Tecpos products should be serviced, repaired or adjusted by TECPOS approved agents.

On lifting work of cylinder, in case of going down of cylinder slowly, caused by getting broken of the seal and backup ring inside the cylinder, alarm the other workers being around the work area in order to avoid.

#### **5.4 - On using hand pump**

1. Connect the coupling of M style to the coupling of F style.
2. Open the Air Valve to counterclockwise direction.
3. Close the Handle Cock to clockwise direction.
4. Lift up to the desired height by the lever.

## 5.5 - On using motor pump

1. Connect the electrical power to the pump.
2. Ascertain the working direction.
3. Lift up to the desired height by the manual lever or remote switch.

# MAINTENANCE

## 6.1 - Requirements before Maintenance working

Performing regular maintenance on the product is critical, to ensure proper operation of its components, and the frequency of the maintenance procedures will depend on usage.

After maintenance working.

1. Clean all dusts.
2. Clean all contact parts with dried clean cloth.
3. The damaged parts and the cause of the problem have to be recorded on the product history nook for traceability.
4. Sufficient pre-operation is required before working the product operation.

## 6.2 - Daily checking items

1. Check the leakage of oil from the inside of the cylinder.
2. Check foreign material on the rod of the cylinder.
3. Check contamination condition on the head of the cylinder.
4. Check foreign material on the coupler female of the cylinder.

# TROUBLESHOOTING

The repair work should be done by the qualified person from Tecpos factory

Status	Causes	Measures
No working of going down motion of cylinder	Coupler ring is loose caused by long time using or defective assembling.	1. Long time using: exchange with a new one. 2. Defective assembling: assembling again correctly.
	Defective the wall surface inside the cylinder due to the piston is not verticalness motion accurately and the motion on a slant	Contact manufacturer for repair
	Enlarged the upper size of the piston rod long time using	1. Exchange with a new one 2. Grind the upper side of the piston rod
No working of going up motion of cylinder	Going up motion less than desired height due to the tolerance size of the inner diameter of cylinder is enlarged by long time using	Contact manufacturer for repair