



Operator Manual S60 and S62 Hydraulic Telescopic Cylinders



S60 HOIST SHOWN

Record your telescopic cylinder details below (Refer to hoist plate – see Page 5)

Model code;

Date put into service;

Serial number;

SAFETY INSTRUCTIONS

Failure to follow these instructions may cause the cylinder to collapse or malfunction which may result in death, serious personal injury or property damage.

Oil specification: ISO VG 32, 46 or 68 (depending on operating climatic conditions)
Recommended filtration: 25µm/ 1µin

- Do not set the pressure relief valve over the maximum working pressure as indicated on the cylinder type plate.
- This cylinder requires air bleeding
- Keep the cylinder, top pin and trunnions well greased.
- Beware of sticking loads in the body (mud, asphalt etc.)
- Do not shunt or bump the vehicle or cylinder as a means of breaking loose any sticky loads.
- The driver must maintain constant control and good visual contact during the tipping cycle.
- Switch the tipping control to hold after the body is lowered.

HYDRECO
POWAUTO

www.hydreco.com

 WARNING		
RIGHT	WRONG	POSSIBLE CONSEQUENCE
 <p>Falling tipper body can crush Do not overload and always load evenly</p>		
 <p>Falling tipper body can crush Always tip on level ground</p>		
 <p>Falling tipper body can crush Stay out of the working area of an operating tipper</p>		
 <p>Falling tipper body can crush Always tip with truck and trailer in line</p>		
 <p>Lowering tipper body can crush Never be under an unsupported body</p>		
 <p>Raised tipper body can crush Always drive with a fully lowered tipper body</p>		
 <p>Electric shock hazard Beware of overhead power lines</p>		

 WARNING	
<p>This cylinder is designed as a lifting device only. It must not be used as a structural member or be subject to side loads and/or abnormal Conditions.</p> <p>Failure to follow these instructions may cause the cylinder to collapse or malfunction which may result in death, serious personal injury or property damage.</p>	<p>Read and understand the full operator's manual before use.</p>  <p>Failure to follow operating instructions could result in death or serious injury.</p>

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Product Use

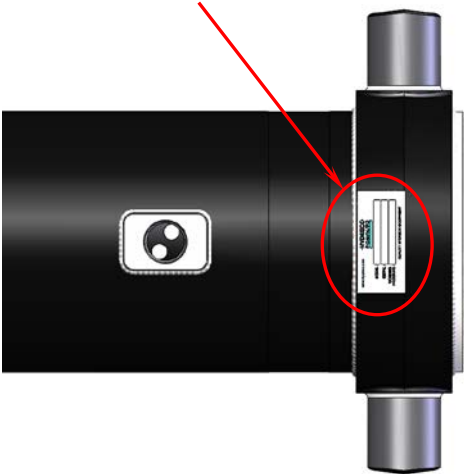
The product referred to in this document, S60 telescopic cylinders, are designed for tipping vehicles, Trucks and Trailers. This document works as a general guide for safe usage but do not replace the bodybuilder's instruction on the maximum load capacity of the vehicle, bearing in mind the telescopic cylinder and hydraulic system capability and country specific road traffic regulations.

Copyright

This document may not be reproduced or transmitted in part or its entirety without the written permission of Hydreco.

What product do I have?

The telescopic cylinders have a product identification label with information shown below. It is located close to the oil inlet port. Record the numbers in this document in case the identification tag is lost.



Read this before using the product

Learn about the key features this product has (see Page 7). Keep in mind systems varies by specifications.

Legend on symbols in this document:



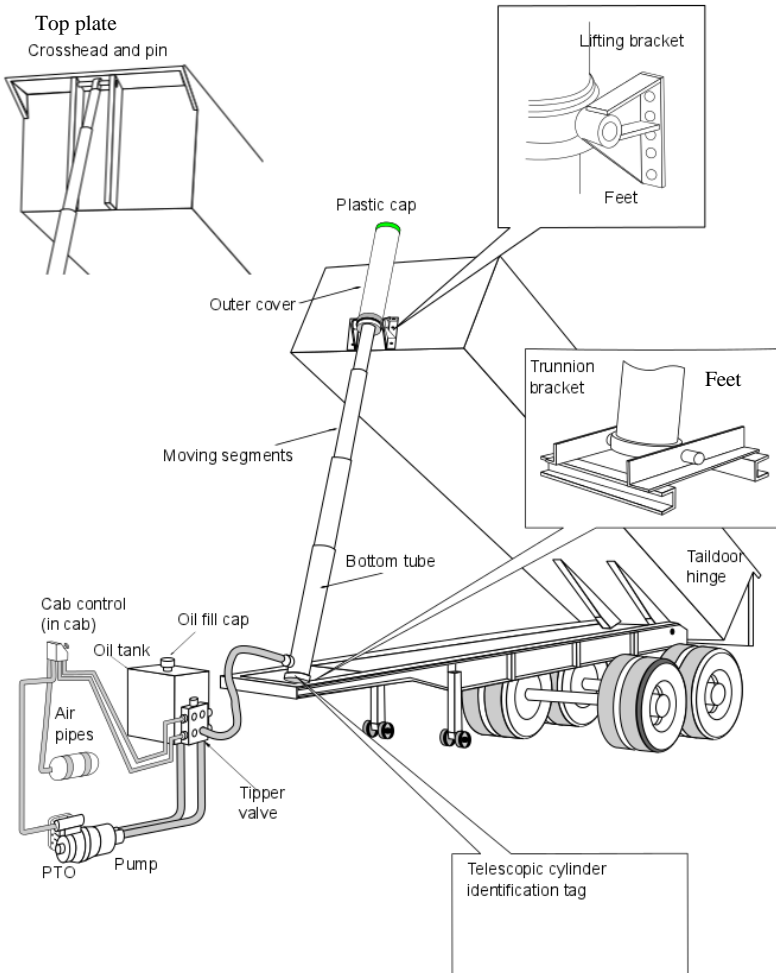
Read this instruction carefully before using the product covered in this document to avoid dangerous product use.



These caution signs tell you do's and don'ts and will give you as a user of these products, a better insight how to use the product covered in this document in a safe way.

Checks to do before use...

- Hoses and fittings, no leaks or scrape marks
- Cylinder mountings and rear hinge are secure
- Oil level
- Hydraulic Couplings are tight or joined correctly
- PTO function and warning lights



Precautions on Proper Use of Telescopic Cylinders



Read the cautionary warnings below before using your Hydreco telescopic cylinders

The telescopic cylinder must not be used as a structural part of the tipper truck or trailer, the telescopic cylinder is only designed to provide a lifting force. The cylinder is strictly a lifting device and should remain free to find its own trajectory line of extension, ensuring that the moving segments remain free from any type of lateral loading.

Do not allow the vehicle to rollover or tilt laterally since that will inevitably cause the cylinder to bend, bulge or separate causing the tipper body to drop suddenly.

Do not "bump" (drive backward and suddenly stop) to dislodge sticky loads as this practice can potentially result in cylinder and/or tipper body and chassis damage.

Do not allow the tipper body to drop suddenly since that can result in severe injury or death and/or damage to the chassis and cylinder.

Do not move the truck until the tipper body or trailer is lowered completely. Do not drive the truck while the P.T.O. (power take-off) or hydraulic pump is engaged. Unless a hot-shift PTO is fitted.



Make sure the top and bottom tipper body mountings are properly aligned, and that the mounting pin tolerances are with appropriate clearance.

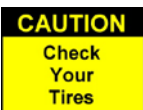
Failing to do so may cause scoring of the moving segments, leakage, or improper sequencing which could cause the unit to fail.



The telescopic cylinder is not designed to withstand lateral or side pressure that occurs when the truck or trailer is leaning. Therefore do not activate the telescopic cylinder when the truck or tipper trailer is not level or is on soft ground. To avoid potential tip-over the telescopic cylinder should not be used where the truck or tipper trailer is on uneven terrain, or soft ground, the same is valid on fresh fill, where wheels may sink on one side, again potentially leading to a tip over.



Do not attempt tipping operations in high, gusty or cross wind conditions or during heavy crosswinds. If possible, raise the tipper body directly into the wind.



A blown or severely under-inflated tyre can cause instability when tipping. Always check tyres visually for cuts or punctures. Make sure all tyres are inflated correctly. Correct tyre inflation also improves wear and fuel economy.



This is a situation when the load doesn't come out of the tipper body by itself and it occurs when the composition of the load makes it "glue" itself to the tipper body. If you suspect that this can happen (moisture of loaded material etc.) use an observer to watch the tipping and alert the driver if it happens. If it happens the driver should immediately lower the tipper body slowly (with the cylinder hydraulic control valve partially open). The risk with a sticky load in a partially or fully raised tipper body is that the vehicle can rollover or tilt laterally due to the uneven load condition this creates.

When the tipper body is lowered completely then unload it manually or with suitable mechanical aid.

**Danger warning!**

Do not use the telescopic cylinder to try to loosen the sticky load, i.e. rapidly moving the control handle between Lower and Raise positions. Do not move the truck or trailer with the tipper body raised. Do not move the truck or trailer and press brake pedal to cause shaking in the tipper body.

All of this causes dangerous hydraulic pressure spikes which can destroy the cylinder or other hydraulic circuitry components.

CAUTION
Keep Truck
and Trailer
in straight line

To have the best stability of the tipping trailer, always do the tipping when the prime mover and trailer are in a straight line (not jack-knifed).

CAUTION
Keep people
away from
tipping truck

Do not activate the tipper function while personnel or equipment are alongside or behind the tipper body or tipper trailer.

CAUTION
Always
Keep
Control

It is important and absolutely vital that the driver stay in control of the entire tipping process. If a tipper body starts leaning to any side the operator must immediately lower the tipper body and check for and sort out any issues. Then, thereafter, they may continue to finish tipping.

CAUTION
Avoid
Slopes

Always perform the load tipping on flat surfaces. There is a potential roll-over risk if the tipping is done on a slope

CAUTION
Do
Not
Overload

Follow the manufacturer's instructions on maximum permissible load in the tipper body. If the body is overloaded then there is also danger of a tip over. Overloading can also cause the entire hydraulic circuitry to fail.

CAUTION
Load
Evenly

Make sure the tipper body is loaded evenly. If it is not then there is an increased risk for a rollover, tilt or tip over.

CAUTION
Keep Normal
Pressure

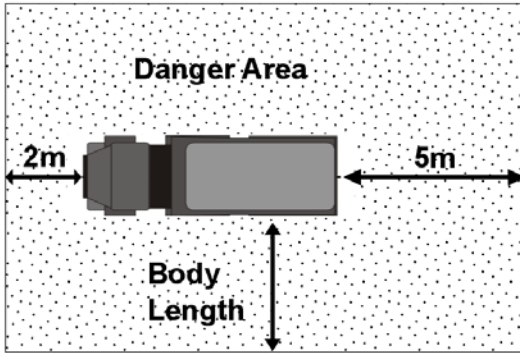
A fatal risk for people and equipment can happen if the telescopic cylinder is over-pressurised. The factory approved operating pressure should not be exceeded. Operating the tipper function slowly will help to avoid exposing the hydraulic cylinder and system to a shock or spike in hydraulic pressure.

CAUTION
Check the
Hoses

Hydraulic hoses or lines should be inspected regularly. Replacement of worn out or damaged hoses is a must, since failed hoses can cause severe injury or death and/or damage to the vehicle and telescopic cylinder.

CAUTION
Check the
Oil

The hydraulic oil should be checked and changed regularly to avoid contamination leading to internal cylinder damage and/or hydraulic system components.



Operating Pressure

Sizes	Normal operating pressure	Max. relief valve pressure
120 to 165	175 bar (2500 psi)	210 bar (3000 psi)
190 to 215:	140 bar (2000 psi)	175 bar (2500 psi)

- Check product identification tag for any other pressure restrictions
- Make sure a pressure relief (overload) valve is in the hydraulic circuitry.
- Do not tamper or attempt to alter the pressure relief (overload) valve in the circuitry

When driving

Empty body → Leave the cab control on 'hold' to minimise body bouncing



Loading body → Put the cab control in lower to ensure that no oil is trapped in the cylinder and the entire load rests on the chassis. Then return the control to 'hold' when travelling

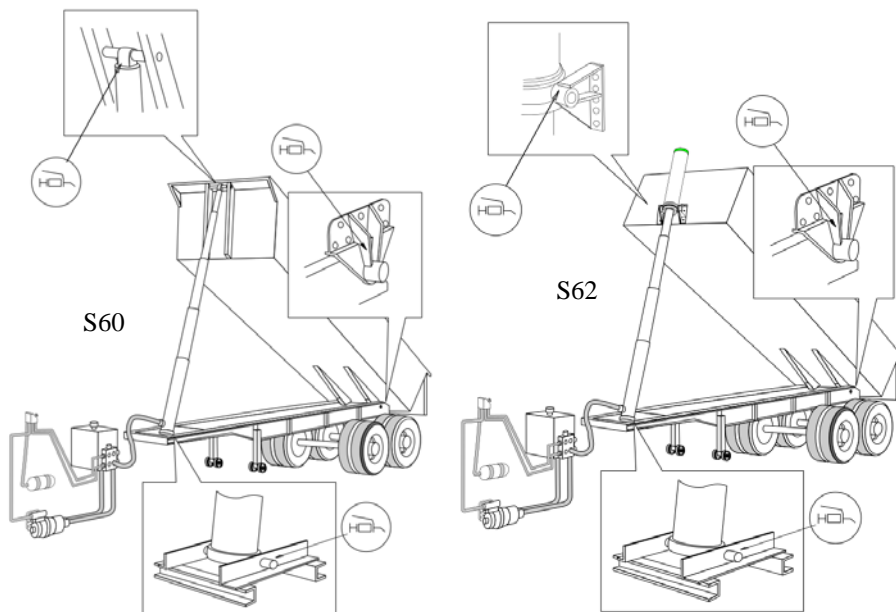


Recurring maintenance

Weekly

With **BODY DOWN**, handbrake on and engine off

- Top up oil in oil tank to dipstick level, only using clean hydraulic oil.
- Apply grease to lubricate points shown in diagram



Monthly

- Grease the tailgate hinge and locking mechanism.
- Where appropriate, check coupling's seals when uncoupled.
- Replace any worn or damaged hoses or pipes.
- Make sure all pipes and hoses are secured to chassis and not hanging loose.
- Tighten any loose pipe connections.
- Check the outer cover fixing bolts and nuts are tightened.

Contact your HYDRECO service dealer if:

- The outer cover (where applicable) is loose; sideways or rotating
- Any tube is damaged
- Any trunnion arms, outer cover arms or rear hinge brackets are worn
- Any oil leakage from cylinder or hydraulic circuitry is observed
- Any air leakage from circuitry or controls

Quarterly

Use spanners to check the tightness of the fixing bolts on the tipper valve, PTO and brackets

Yearly

(more often in dusty or dirty conditions)

Drain and refill the tank with clean hydraulic oil. In order to protect the environment, ensure no oil is spilled when draining, and old oil is disposed correctly

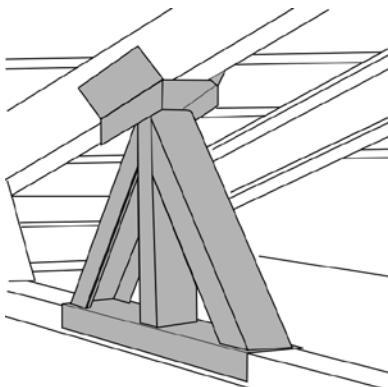
Safety Precautions if a Cylinder is being serviced while mounted



It is the operator's responsibility to ensure that only fully trained personnel repair or service this equipment. If necessary contact your local service agent for assistance.

Make sure that there are strong supports in place to keep the body from lowering by mistake before any adjustments or service is done to the cylinder or any other part of the hydraulic circuit. Place the dump control in the lowering position to eliminate any oil pressure in the cylinder (i.e. the hydraulic system has been relieved of any and all pressure before service work commences).

- Field service repair and maintenance should be limited to replacement of oil seals, top bearings, wipers and adjustments of cap nuts for leakage and proper moving segment sequencing.
- Before repairing or maintenance of the cylinder, check the moving segments for any damage. If there are any scores or scratches, smooth any such marks out with a fine stone or emery cloth to avoid ruining the new seals.
- After repair, a thin film of oil may be on the moving segments and may be noticed on the top of the moving segments at the adjustable cap nut after several cycles. This should not be mistaken for a leakage.
- If a cylinder can't be corrected in the field by service repair, we recommend that the cylinder be serviced by a qualified cylinder repair facility.
- If it is necessary to dismantle a cylinder due to a damaged item, such as a moving segment, the cylinder should be completely disassembled and all parts inspected. When requesting information or ordering parts, refer to the tag placed toward the top of the outer barrel/tube. If the tag has been removed then look for the cylinder and serial numbers engraved on the outer tube surface between the oil port and the bottom end.
- Always use proper safety equipment. See below for typical body-prop arrangement:



Oil (and filling the oil tank)

To maintain expected hydraulic cylinder functionality the oil must be clean. Make sure using clean oil at change and topping up.

Follow specification ISO6734/4 HM68 for ambient temperatures between 0 gr. C to 50 gr. C.

Example of trade names are (others exist, check with oils supplier for alternatives):

Brand	Oil	Other examples
CASTROL	HYSPIN AWS 68	
ESSO	VG68	NUTO H 68, UNIVIS N 68, QUINTOLUBRIC 888-68
GULF	HYDRASIL68	HYDRASIL 68 W
MOBIL	DTE26	MOBIL SHC 526, MOBIL DTE 26, MOBIL DTE 16M, MOBIL DTE EXCEL 68,
SHELL	TELLUS 68	

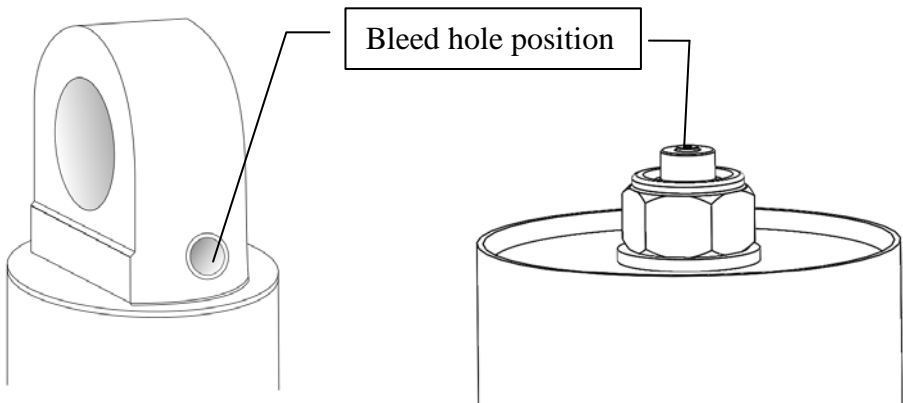
For other conditions seek advice from your local distributor or direct from Hydreco.

To determine the oil level, remove the filler cap, (with the body down), and check that the oil level is between min and max marks on the dipstick.

Bleeding the system

If the telescopic cylinder moves unevenly, or the tubes move out of sequence in 'lower', there may be air in the system. The cylinders have a bleeding screw near the top. Follow these instructions to bleed the system:

1. Stop the body approx. 300 mm (12") above the chassis frame
2. Put the control in 'hold'
3. Locate the bleed screw and slacken about one turn, (DO NOT REMOVE)
4. The body will come down slowly and force the air out of the system
5. When oil flows evenly, tighten the bleed screw
6. If the hoist is still not moving smoothly, repeat the whole procedure
7. Lower the body and top up with clean oil in the tank



Frequently asked questions

The below actions can be taken without special tools. If you need assistance, call your nearest Hydreco service dealer (refer to www.hydreco.com)

The cylinder is not moving smoothly

Air may be trapped in the system. Check oil level and then take the cylinder to full stroke several times; any air will be brought back to the tank.

The body will not raise

Check:

- The vehicle air pressure has been built up (see vehicle operator's manual)
- The oil is up to dipstick level in the tank
- The PTO is engaged (switch is 'in') and oil is circulating
- The tipper control is in 'raise'
- There are no damages (sharp bends etc.) on the oil pipe
- The truck and trailer hose couplings, where applicable, are clean and screwed or coupled properly together
- The air pipes do not leak

The body will not come down

Confirm PTO has disengaged and warning light is out.

Put the tipper control back in 'raise'. Then:

- Rev the engine until the relief (overload) valve blows, i.e. until you hear a sharp noise coming from the tipper valve
- Keep the engine revs going for five seconds
- Lower the body

If the body still will not come down, put the tipper lever in 'hold', **prop the body**, switch the PTO to 'out' and turn off the engine.

The body doesn't stay up with the tipper control in 'hold'

Put the tipper control in 'raise' and lift the body. Then:

- Rev the engine until the relief (overload) valve blows, i.e. until you hear a sharp noise coming from the tipper valve
- Keep the engine revs going for five seconds
- Put the tipper lever in 'hold'

If the body still will not stay up, lower the body.

Extreme noise

- Check the oil level
- Check pipes for damages and leaks

Spare parts and service

Use only original Hydreco parts from Hydreco approved service dealers.

Refer to www.hydreco.com for contact details

Always reference the cylinder part number and serial number when ordering parts or seeking advice.

CONDITIONS OF SALE - FOR GOODS

1 DEFINITIONS

- 1.1 In the following conditions of sale the "Company" shall mean Hydreco Hydraulics Proprietary Limited (ABN 90 000 598 354) and "Purchaser" shall mean the entity purchasing "the Goods" being the Goods the subject of the Conditions of Sale.

2 GENERAL

- 2.1 The only contractual terms which are binding upon the Company are those set forth herein and otherwise agreed to in writing by the Company and those, if any, which are imposed and which cannot be excluded by the law.

3 QUOTATIONS

- 3.1 Any quotation made by the Company shall not be construed or operate as an offer or obligation to sell but shall be an invitation to treat only and the Company reserves the right to accept or reject in its absolute discretion any orders which may be received by it. In the event of any conflict between any terms and conditions contained in any purchase order of the Purchaser and these Conditions of Sale, these Conditions of Sale shall prevail.

4 PRICE AND PRICE VARIATION

- 4.1 Prices charged and payable shall be those ruling at the date the Goods are delivered to the Purchaser. Prices are exclusive of Goods and Services Tax (GST), delivery costs and any other charges and expenses which shall be to the account of the Purchaser.

5 TERMS OF PAYMENT

- 5.1 Unless otherwise agreed to in writing by the Company for the Goods and any other costs and expenses shall be made by the Purchaser of the Company strictly nett cash within thirty (30) days from the date of notification by the Company that the Goods are ready for delivery or from the date of the invoice, which ever is earlier. Should the Purchaser delay or default in respect of any payment due hereunder, the Company shall have the right to charge interest at a rate equivalent to two per centum (2%) in excess of such rate as may be charged from time to time to the Company by its bankers for overdraft accommodation, calculated from the date of notification or invoice as the case may be to the date of full and final payment. Any payment by the Purchaser will be credited first against the interest accrued.
- 5.2 Any cost incurred by the Company in demanding, collecting or enforcing judgements for monies payable (including without limitation, the fees of mercantile agents or lawyers appointed by the Company) must be paid in full by the Purchaser.

6 GOODS & SERVICES TAX (GST)

- 6.1 The Company's prices are exclusive of Goods and Services Tax (GST) and any such charge or similar government or statutory impositions or charges shall be to the account of the Purchaser.

7 INFORMATION AND DRAWINGS

- 7.1 Any descriptive specification, illustrations, data, dimensions, weights, drawings or documents furnished by the Company to the Purchaser or otherwise contained in catalogues, price list or other advertising matter relating to the Goods shall remain the exclusive property of the Company and the Purchaser shall not deal in any way with them including copy, reproduce, transit or communicate the contents therein.

8 DELIVERY AND RISK

- 8.1 The Company will make all reasonable efforts to have the Goods delivered to the Purchaser on the date(s) agreed between the parties but the Company shall be under no liability whatsoever should delivery not be made on the agreed date(s) for whatsoever reason nor shall the Purchaser be entitled to terminate any contract arising herein in such event. Each delivery of the Goods or part thereof is a separate contract and the Purchaser is bound to accept and make payment for partial deliveries.
- 8.2 The Goods or part thereof supplied by the Company shall be at the Purchaser's risk immediately upon delivery to the Purchaser or into the custody of any carrier or anyone acting on the Purchaser's behalf, whichever is the sooner. If the Company gives notice to the Purchaser that the Goods or part thereof are ready for delivery and if for any reason the Purchaser fails to take possession of the Goods within seven (7) days from the date of such notification then risk in the Goods shall pass forthwith to the Purchaser and the Company shall be entitled to payment for the Goods in accordance with the provisions hereof and the Company may arrange for storage of the Goods, the cost of which and all costs incidental thereto shall be payable by the Purchaser.

9 ACCEPTANCE AND RETURN

- 9.1 The Purchaser shall inspect the Goods forthwith upon delivery and shall within seven (7) days from the date of delivery give written notice to the Company of any matter or thing by reason whereof the Purchaser may allege that the Goods are not in accordance with the contract. All Goods are manufactured and/or supplied subject to the usual trade tolerances relating to weight, dimension and processing. If the Purchaser fails to give such notice, the Goods shall be deemed to have been accepted by the Purchaser.
- 9.2 The Company may, at its absolute discretion, accept returns of Goods for credit or refund up to fourteen (14) days after the date of delivery. A service charge of 20% of invoiced value shall be deducted from the credit or refund on any returned Goods accepted by the Company. Goods manufactured to the Purchaser's specification shall not be accepted for return.

10 LIABILITIES OF THE COMPANY

- 10.1 Except to the extent provided herein, the only conditions and warranties which are binding on the Company in respect of the state, quality or conditions of the Goods supplied to the Purchaser are those imposed and required to be binding by statute (including the Trade Practices Act, 1974) and to the extent permitted thereby the liability, if any, of the Company arising from breach of such conditions or warranties shall, at the Company's option, be limited to and completely discharged, by either replacement or repair by the Company of the Goods supplied to the Purchaser and otherwise all other conditions and warranties whether express or implied by law in respect of the state, quality or condition of the Goods which may apart from this clause be binding on the Company are hereby in Company are expressly excluded and negated.
- 10.2 Except to the extent provided herein the Company shall have no liability (including liability in negligence) to any person or body for any loss or damage consequential or otherwise, howsoever suffered or incurred, by any such person or body in relation to the Goods and without limiting the generality thereof, in particular any loss or damage consequential or otherwise howsoever suffered or incurred by any such person or body caused by or resulting directly from any failure, breakdown, defect or deficiency of whatsoever nature or kind of or in the Goods.

11 PURCHASER DEFAULT

- 11.1 If the Purchaser should fail to make any payment due under any contract arising herein or commit any breach of its obligation under any such contract, the Company (in addition to any other remedies conferred herein or by statute) may treat the contract as terminated forthwith without notice. The Company may terminate any contract arising herein if in its reasonable opinion the Purchaser may have difficulty in making payments due under any such contract. Termination shall be without prejudice to any claim the Company may have against the Purchaser.

12 CANCELLATION

12.1 If for any reason the Purchaser cancels its order after its acceptance by the Company or seeks to revise the date of delivery, then the Purchaser shall be liable for all costs, expenses and losses whatsoever including the Company's loss of profit resulting from such cancellation or revision.

12.2 If for any reason the Purchaser seeks to revise or cancel any contract arising herein after its acceptance by the Company or seeks to revise the date(s) of delivery agreed by the parties then the Purchaser shall be liable for all costs, expenses, losses including the Company's loss of profit resulting from such cancellation or revision. In the event the contract is revised, the Purchaser shall be liable to pay the current, revised prices.

13 SAFETY OBLIGATIONS

13.1 Pursuant to section 18(6) of the New South Wales Health and Safety Act (and any legislation of similar effect or any other State or Territory in Australia) the Purchaser hereby agrees that prior to the use of the Goods by any person that:

- i it shall do all that is necessary to ensure that the Goods shall be safe and without risks to health when properly used and;
- ii it shall arrange an inspection of the Goods, in order to certify their safety in the sense indicated above, by the NSW Department of Industrial Relations and any authority in any other State and Territory governing similar matters if the Goods are to be used in that State or Territory;
- iii it shall comply with any recommendation made by any such authority in relation to the Goods.

13.2 The Purchaser, in consideration of the sale of the Goods by the Company to it, hereby agrees to indemnify and keep indemnified the Company against any claim whatsoever and howsoever arising in connection with such legislation against the Company.

14 MISCELLANEOUS

14.1 Failure by the Company to insist upon strict performance of any of the provisions herein or in any contract arising herein shall not be deemed a waiver thereof or of any rights the Company has or may have against the Purchaser and no express or implied waiver by the Company shall be deemed a waiver of any subsequent breach of the said provisions.

14.2 These Conditions of Sale shall be governed and interpreted according to the laws in force in the State of New South Wales and the Company and Purchaser hereby consent and submit to the jurisdiction of the Courts of New South Wales held in Sydney.

**Please put this operator's
manual in the driver's cab**

Notes: -

Notes: -

RECORD OF PURCHASE

NAME _____

ADDRESS _____

PURCHASE FROM _____

PHONE NO. _____

PRODUCT _____

SERIAL NUMBER _____

DATE OF PURCHASE _____

HYDRECO HYDRAULICS PTY LTD
 12 / 167 PROSPECT HWY
 SEVEN HILLS - NSW 2147
 AUSTRALIA.
 TEL - +61(0)2 98386800
 FAX - +61(0)2 98386899

REV.	DATE	DETAIL	CHANGE	CKD.	APPROVED
0	19/02/2015	RELEASED FOR INFORMATION	R1254	A.D.	