

1996

# Tube-Line 500

Parts and Service  
Manual and Automatic

## Notes

Electric Solenoid valves can be manually operated by pushing a small punch into end of spool and holding it in .

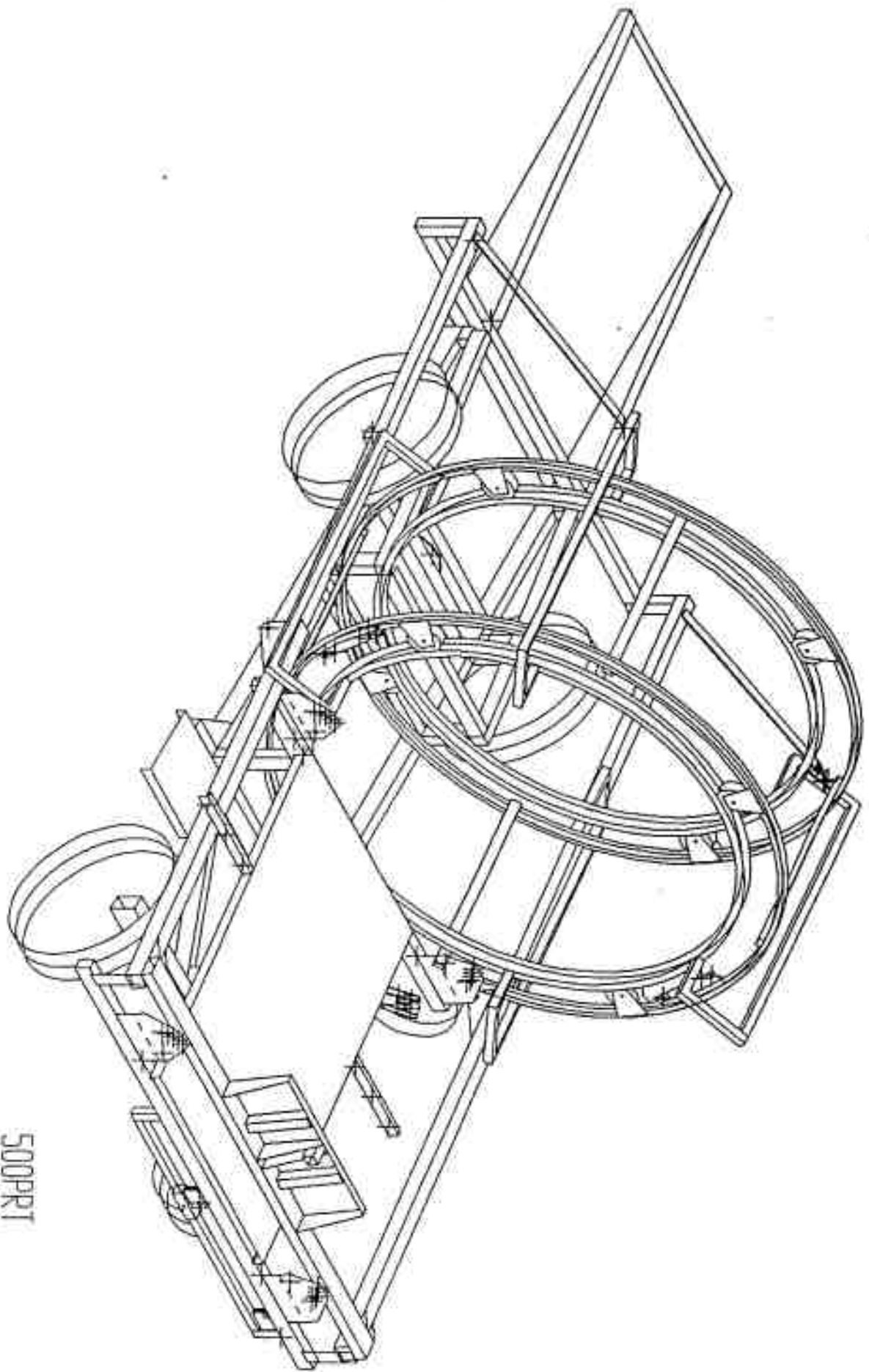
### **CAUTION STAY AWAY FROM WRAP HOOP WHEN ENGINE IS RUNNING.**

Inside Control Panel, control relays are numbered CR1 to CR5 from left to right relay CR1 is wired to table trigger . CR1 will activate solenoid valve to extend ram cylinder and CR5 . CR5 controls throttle solenoid. CR2 and CR3 are wired to motion sensor switch at rear roller, when switch arm is between teeth on sprocket, CR3 is energized, as roller turns switch arm it will be pushed to top of tooth on sprocket energizing CR2 and vice-versa . After both relays CR2 and CR3 are activated, wrap solenoid is energized causing wrap motor to turn . When ram cylinder is extended to the limit switch by the engine CR1, CR2 and CR3 will turn off and CR4 turns on. Wrap motor will stop and ram cylinder will retract until ram cylinder trips limit switch at front end of table . All control relays will turn off .

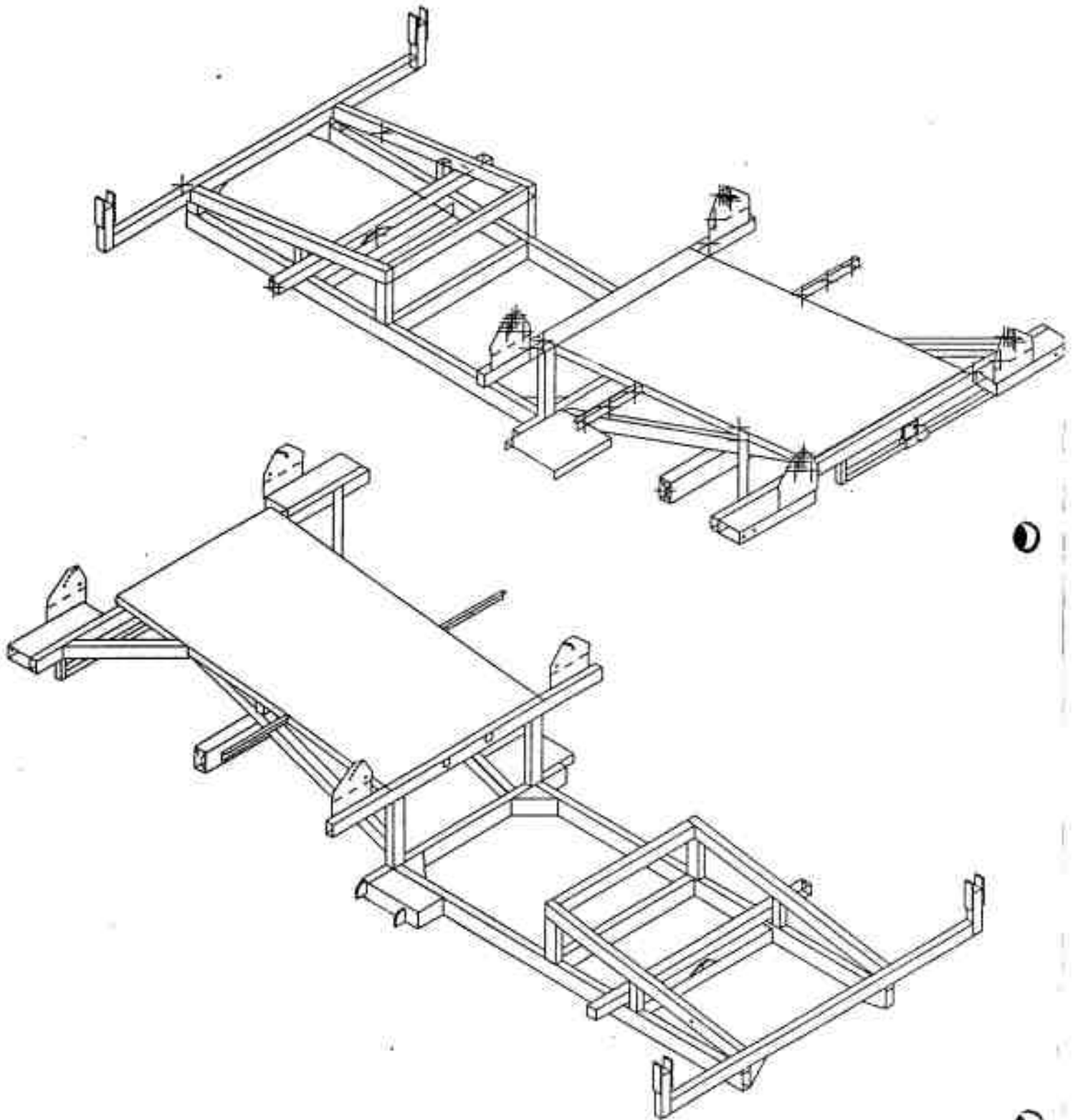
Testing can be done by pushing trigger plate then going to the back and turning roller with sprocket, then waiting until machine goes through the cycle . Or, you can push the small square button on end of control relay 1, then push button on control relay 2 or 3, whichever is not activated. Then waiting until machine goes through the cycle .

When running machine through the cycle and wrapper motor or the cylinders do not work, check flow control valve to see if flow is going to both motor and cylinder .

Engine is stopped by grounding ignition, in case of ignition failure, make sure that stop switch wire is not shorting to frame and engine stop switch is not in closed position.



500PRT



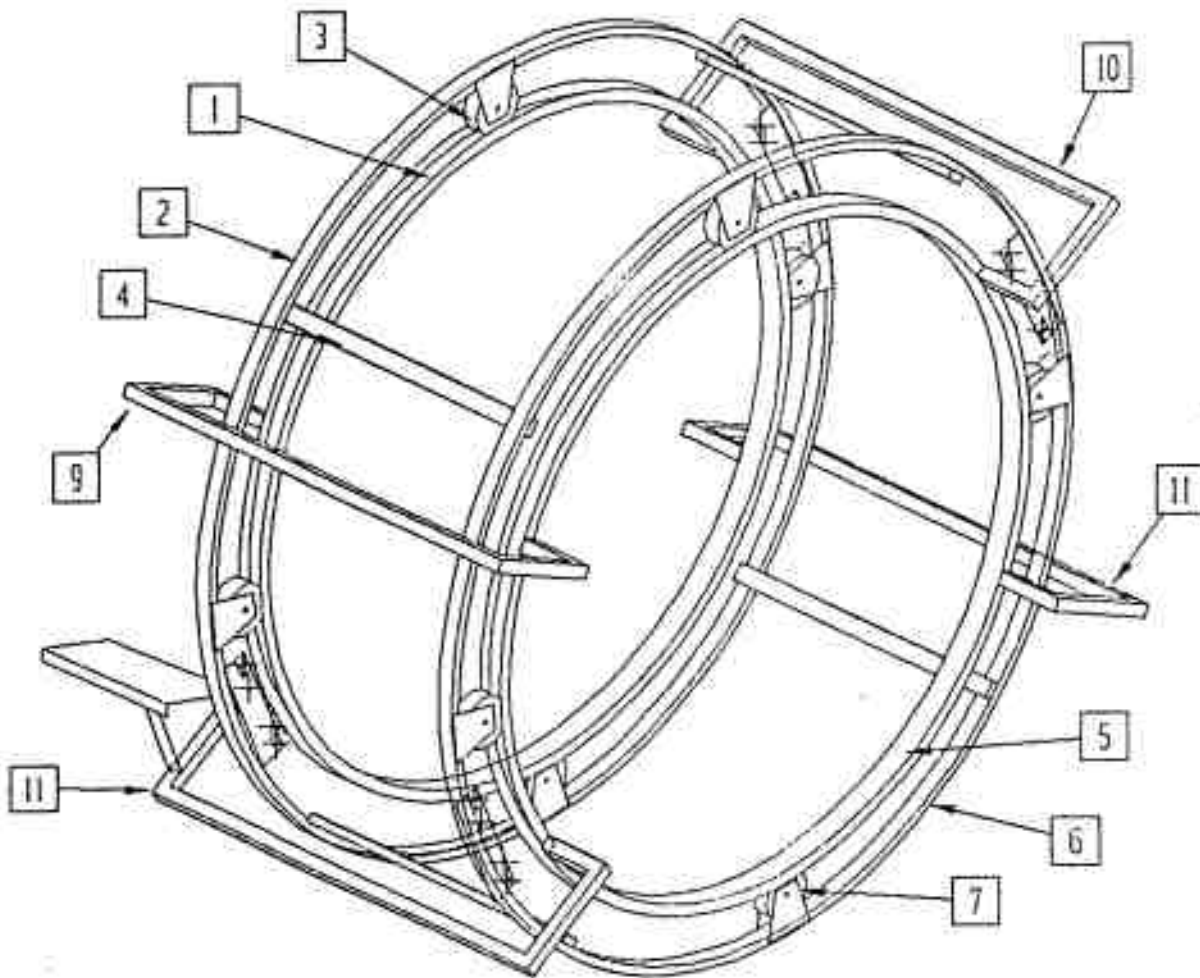
t50nodr1

Tube-Line 500  
Parts Manual  
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# Tube-Line 500

## Wrap Chamber



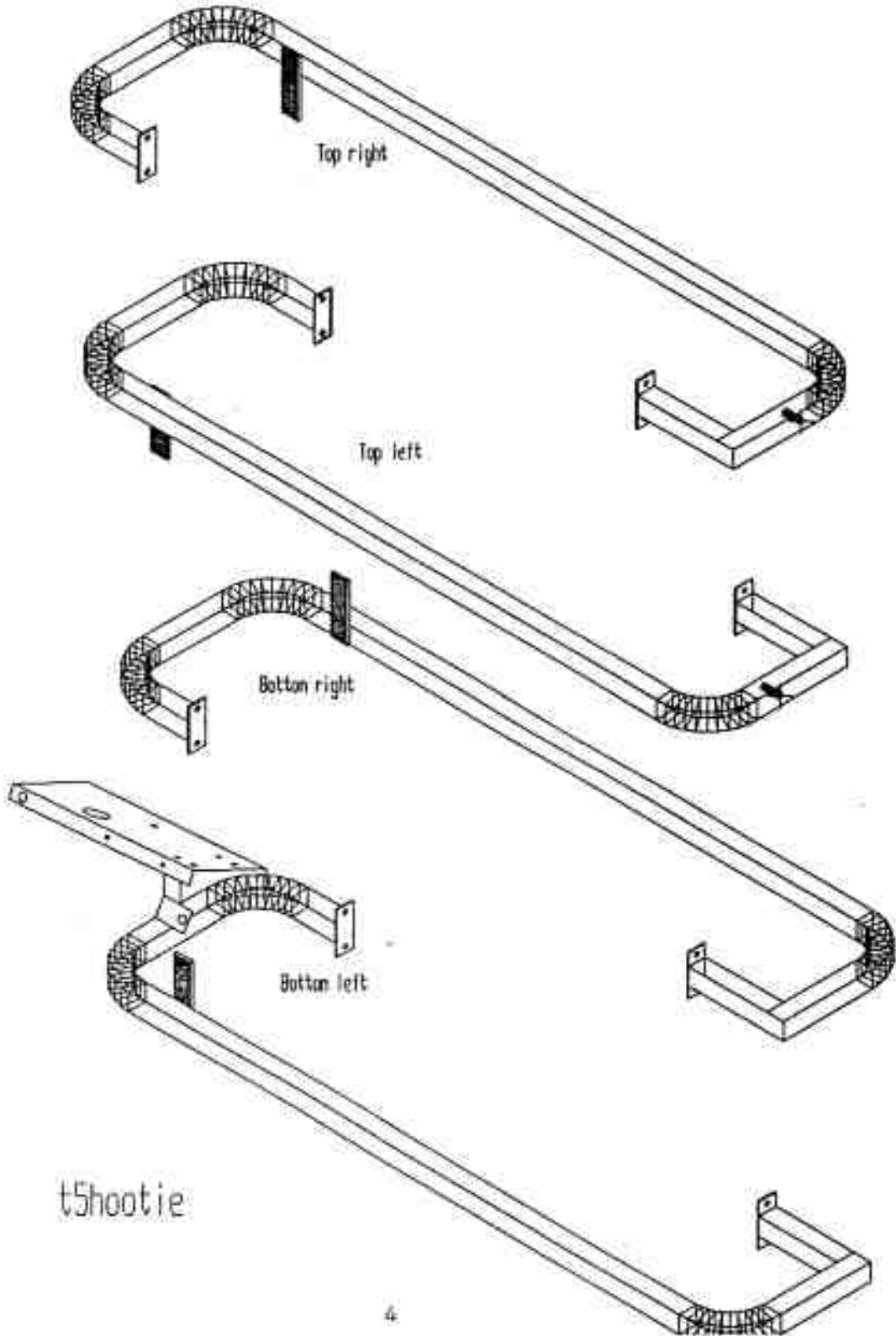
- |   |                    |
|---|--------------------|
| 1 | Front channel ring |
| 2 | Front Tube ring    |
| 3 | Front Wheel 6 in   |
| 4 | Ring Tie           |
| 5 | Rear Channel ring  |
| 6 | Rear Tube ring     |

- |    |  |
|----|--|
| 7  | Rear Wheel 4 in                          |
| 8  | Mounting Bolt 1/2 X 2 / nut / lockwasher |
| 9  | Top Left Hoop tie                        |
| 10 | Top Right Hoop tie                       |
| 11 | Bottom Right Hoop tie                    |
| 12 | Bottom Left Hoop tie                     |

WCH

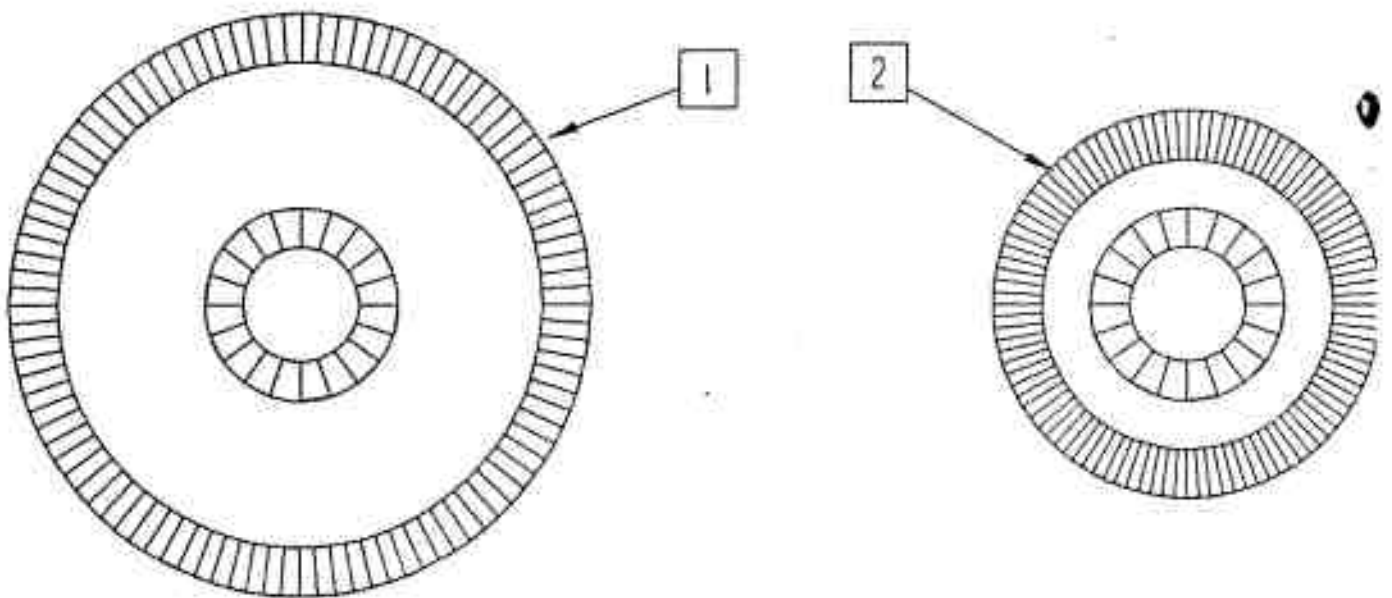
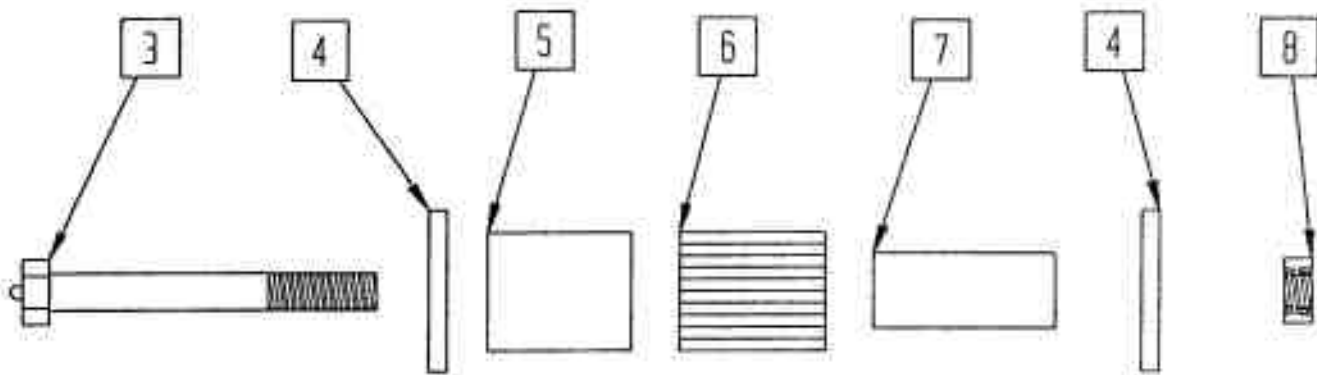
# Tube-Line 500

Hoop tie



# Tube-Line 500

Hoop wheels



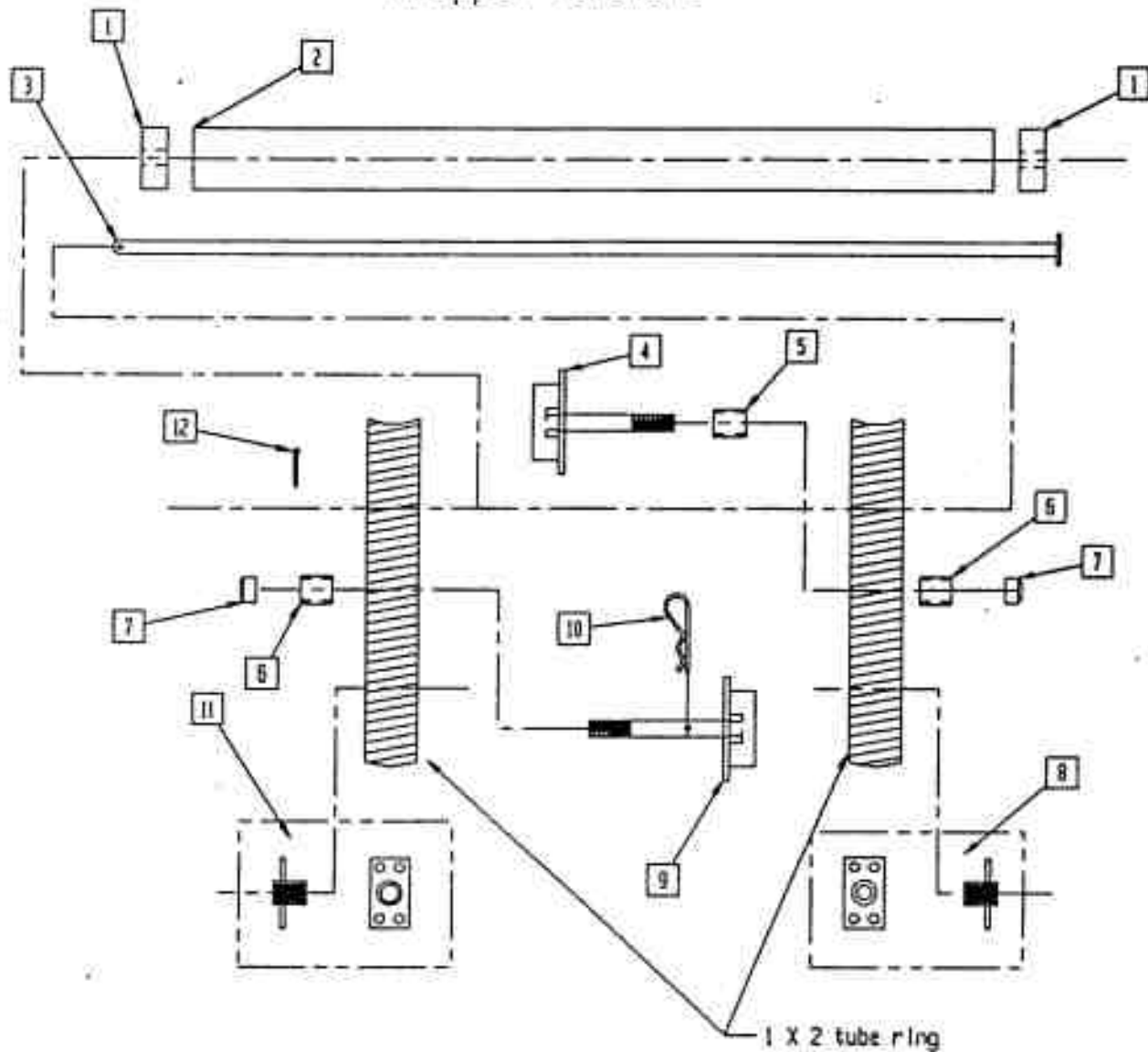
- |   |                |
|---|----------------|
| 1 | 6 in wheel     |
| 2 | 4 in wheel     |
| 3 | axle bolt      |
| 4 | bearing seal   |
| 5 | outer race     |
| 6 | roller bearing |
| 7 | inner race     |
| 8 | locknut        |

HWEE



# Tube-Line 500

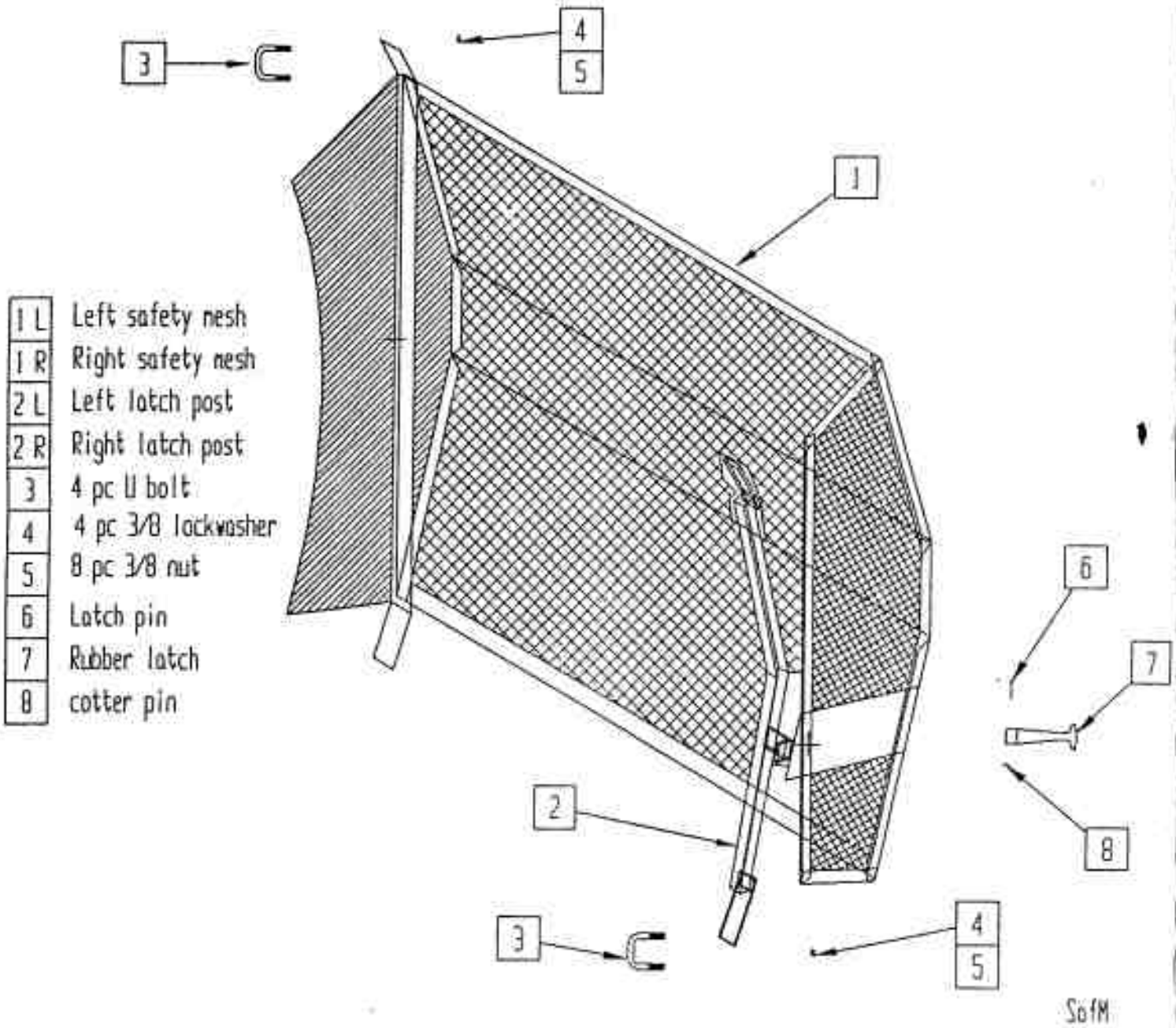
wrapper hardware



- |    |                               |
|----|-------------------------------|
| 1  | 2 in od X 9/16 id X 1 HMWPC   |
| 2  | 2 in ABS pipe                 |
| 3  | plastic roller pin            |
| 4  | plastic wrap spool            |
| 5  | spacer                        |
| 6  | Oilite bearing                |
| 7  | Nylon locknut                 |
| 8  | stretch wrap holder small end |
| 9  | plastic wrap spool            |
| 10 | hair pin                      |
| 11 | stretch wrap holder large end |
| 12 | cotter pin                    |

# Tube-Line 500

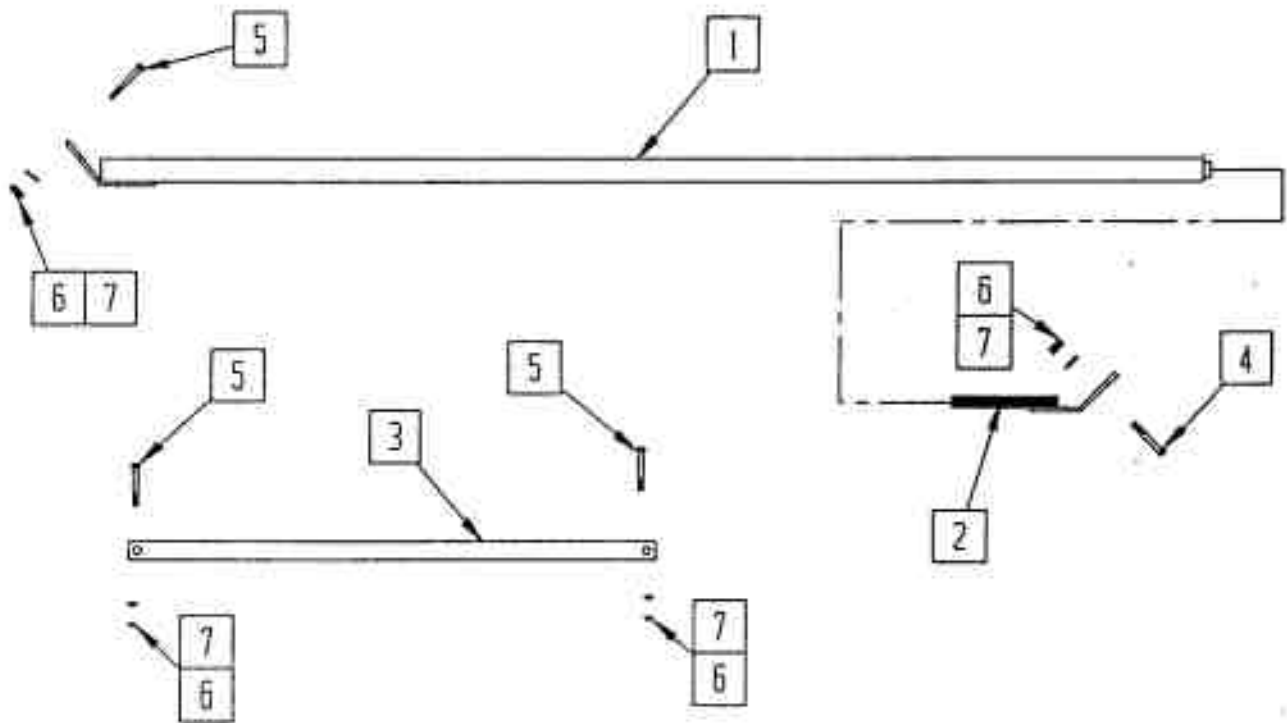
Safety nesh



- |     |                         |
|-----|-------------------------|
| 1 L | Left safety nesh        |
| 1 R | Right safety nesh       |
| 2 L | Left latch post         |
| 2 R | Right latch post        |
| 3   | 4 pc U bolt             |
| 4   | 4 pc 3/8 lockwasher     |
| 5   | 8 pc 3/8 nut            |
| 6   | Latch pin               |
| 7   | Rubber latch cotter pin |
| 8   | cotter pin              |

# Tube-Line 500

Wrap brace & valve brace

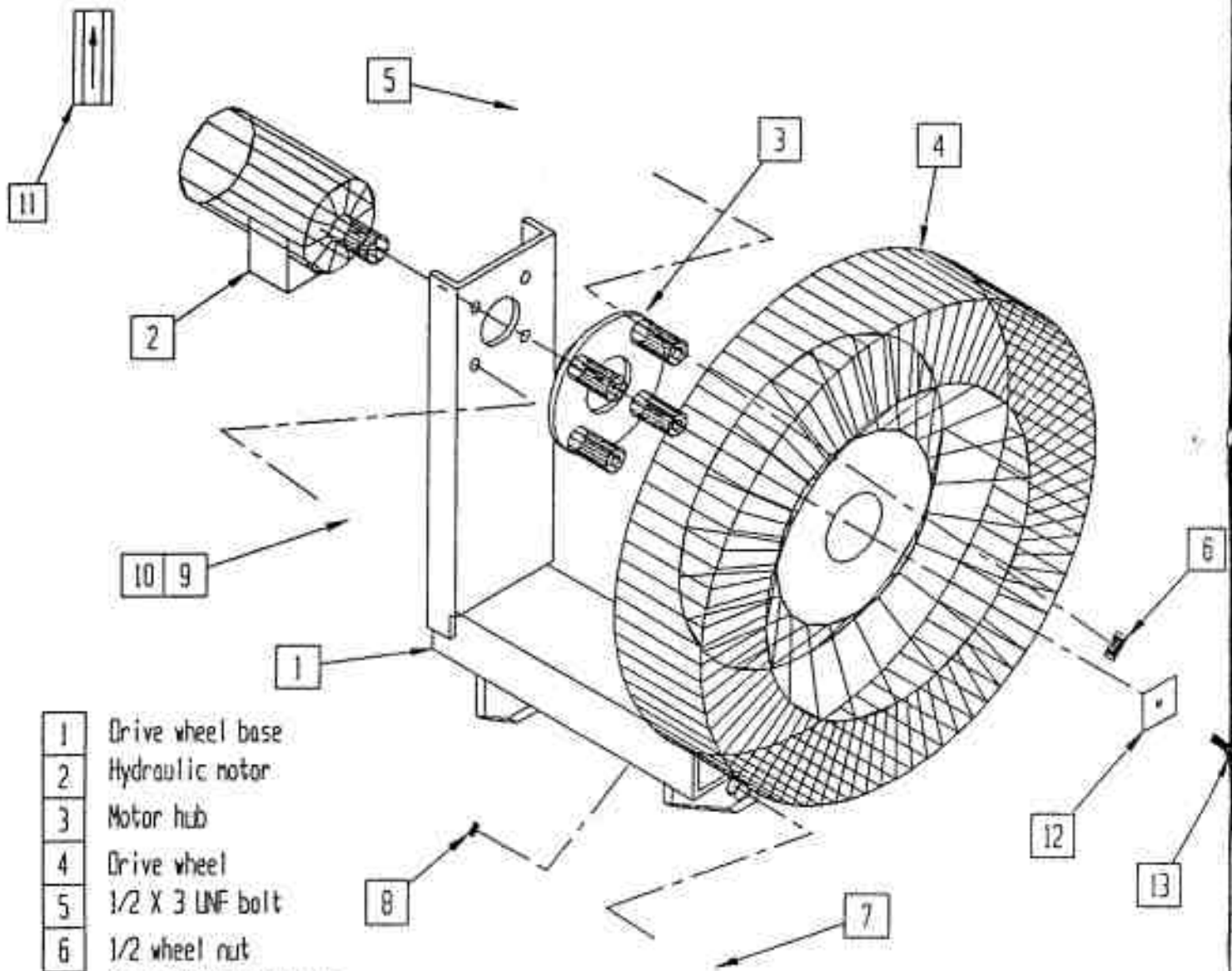


- |   |                   |
|---|-------------------|
| 1 | Bottom brace part |
| 2 | Top brace part    |
| 3 | Valve brace       |
| 4 | 3/8 X 2 bolt      |
| 5 | 3/8 X 1 bolt      |
| 6 | 3/8 nut           |
| 7 | 3/8 lockwasher    |

braceW

# Tube-Line 500

## Drive wheel

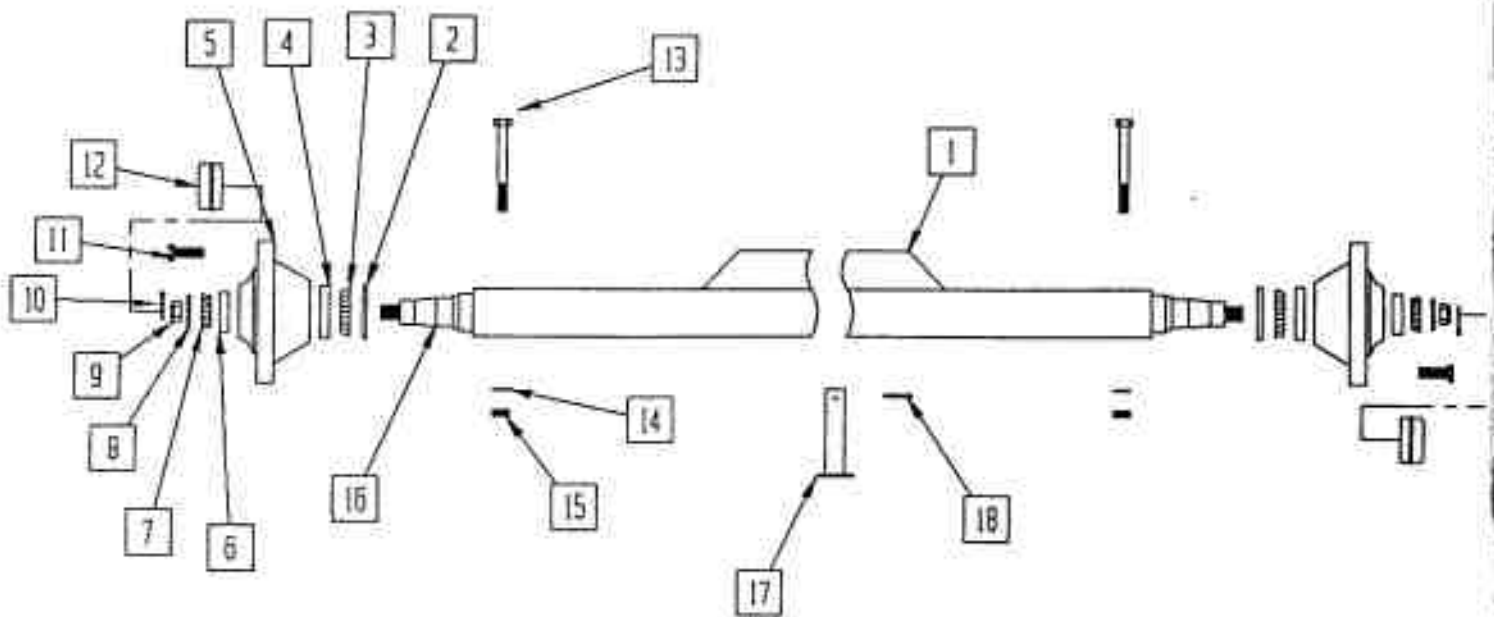


- |    |                                   |
|----|-----------------------------------|
| 1  | Drive wheel base                  |
| 2  | Hydraulic motor                   |
| 3  | Motor hub                         |
| 4  | Drive wheel                       |
| 5  | 1/2 X 3 UNF bolt                  |
| 6  | 1/2 wheel nut                     |
| 7  | 2 pc 5/8 X 1 1/2 bolt             |
| 8  | 2 pc 5/8 locknut                  |
| 9  | 4 pc 3/8 X 3/4 bolt               |
| 10 | 4 pc 3/8 lockwasher               |
| 11 | Check Valve ( manual model only ) |
| 12 | washer                            |
| 13 | 1/4 - 20 X 1 bolt / lockwasher    |

drwhl,

# Tube-Line 500

## Axle/spindle/hub



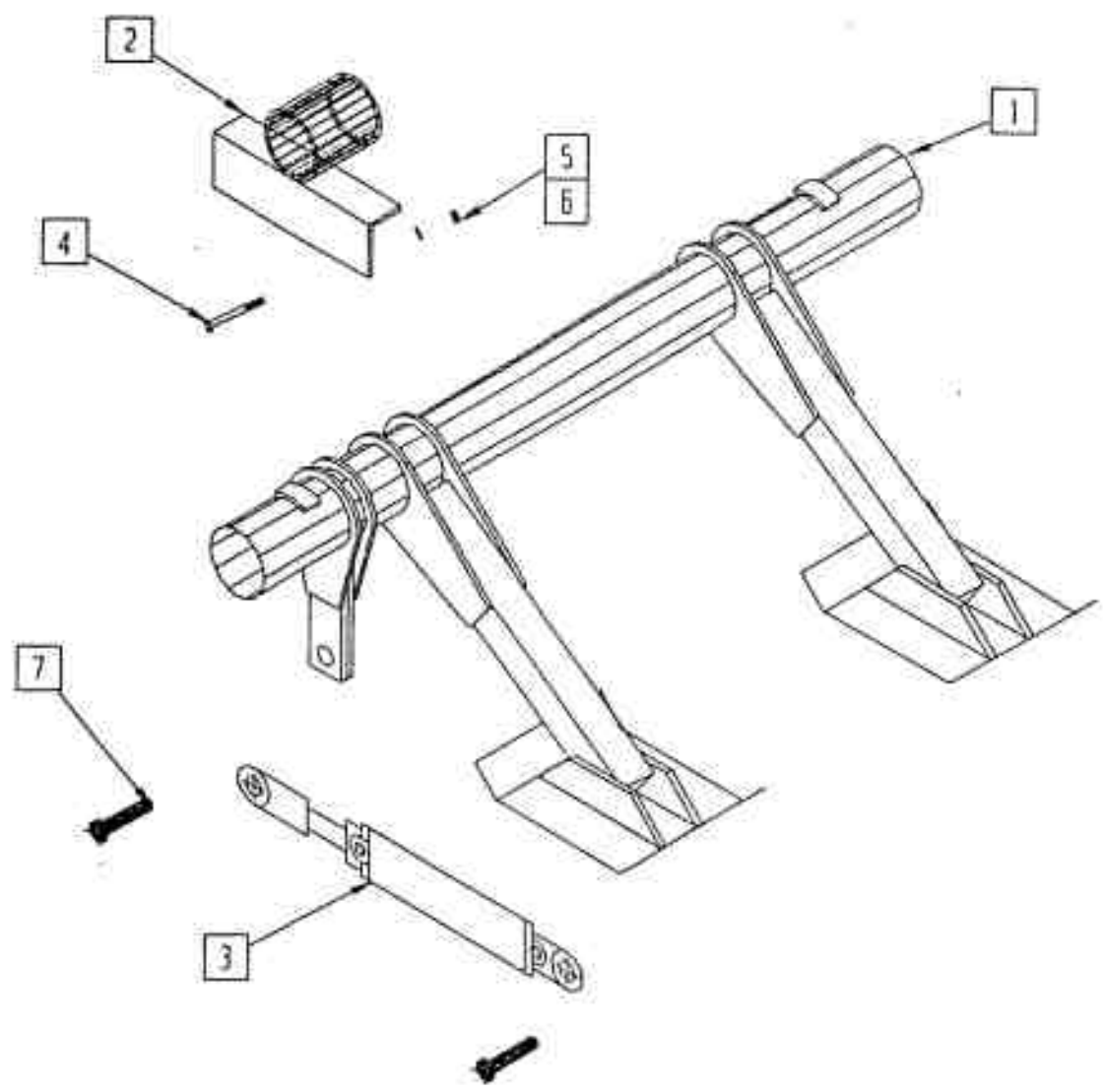
1	Axle
2	seal
3	inner bearing
4	inner bearing race
5	hub
6	outer bearing race
7	outer bearing
8	flat washer
9	wheel nut
10	cotter pin

11	wheel stud
12	dust cap
13	spindle bolt
14	1/2 lockwasher
15	1/2 nut
16	spindle
17	axle pin
18	cotter pin

Axle

# Tube-Line 500

## Brake

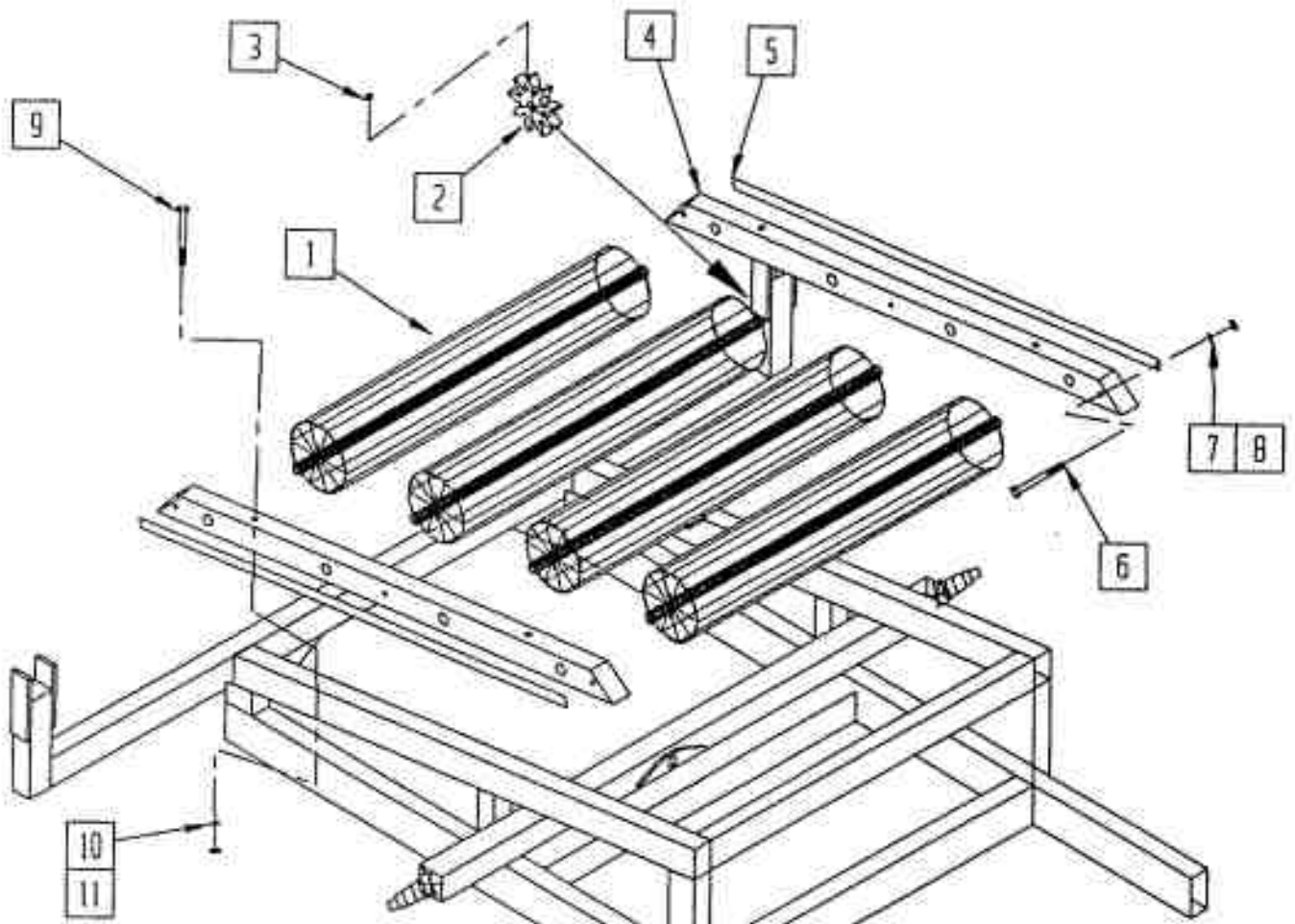


- |   |                     |
|---|---------------------|
| 1 | Brake racker        |
| 2 | Bearing             |
| 3 | 2 1/2 X 8 cylinder  |
| 4 | 1/2 X 3 1/2 bolt    |
| 5 | 4 pc 1/2 nut        |
| 6 | 4 pc 1/2 lockwasher |
| 7 | 2 pc cylinder pin   |

Brake

# Tube-Line 500

rear roller

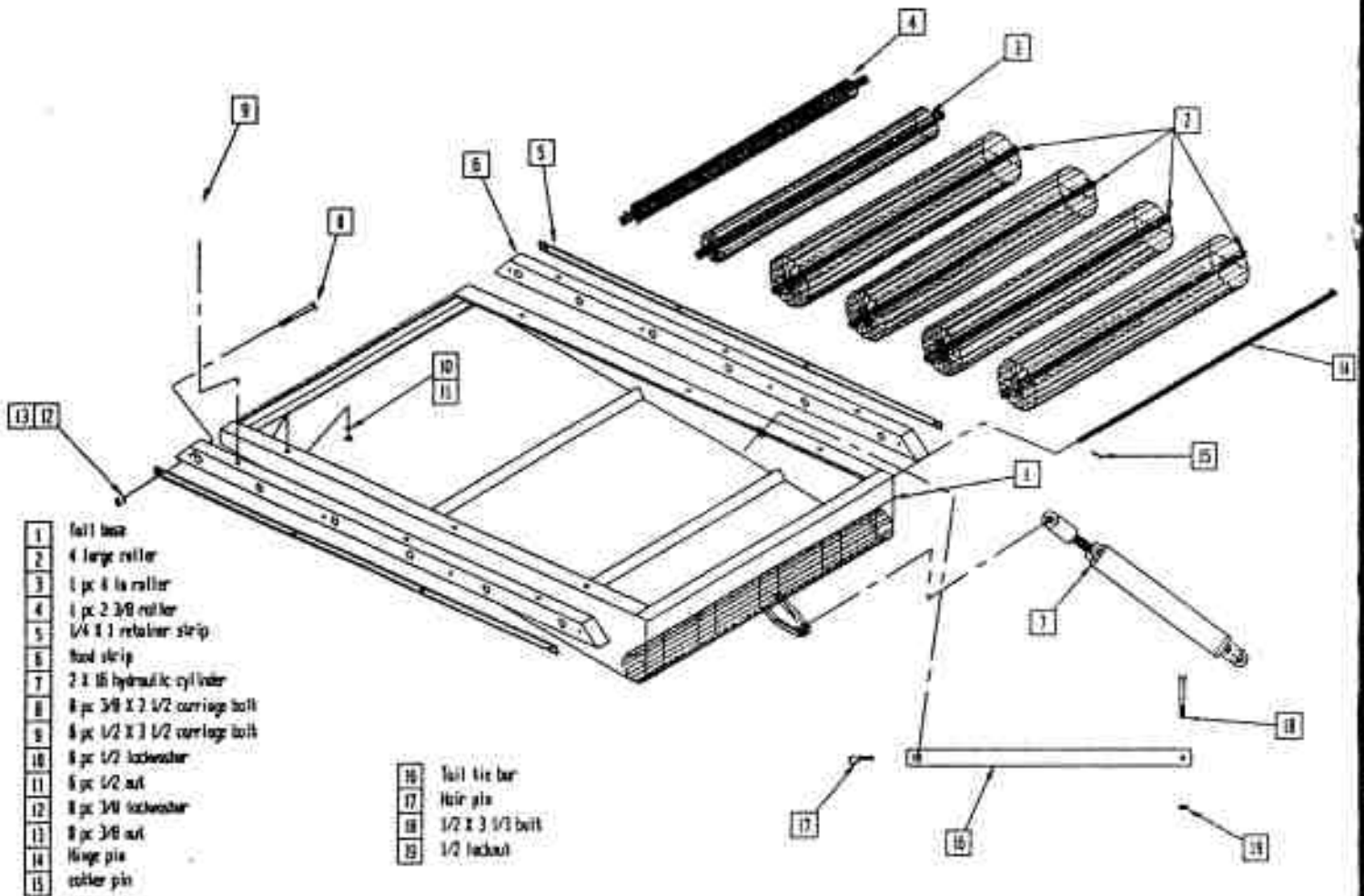


- |    |                                    |
|----|------------------------------------|
| 1  | 4 large roller                     |
| 2  | sprocket motion control (electric) |
| 3  | 2 pc 3/8 set screw                 |
| 4  | 2 pc short wood strip              |
| 5  | 1/4 X 1 retainer strip             |
| 6  | 6 pc 3/8 X 2 1/2 carriage bolt     |
| 7  | 6 pc 3/8 lockwasher                |
| 8  | 6 pc 3/8 nut                       |
| 9  | 4 pc 1/2 X 6 carriage bolt         |
| 10 | 4 pc 1/2 lockwasher                |
| 11 | 4 pc 1/2 nut                       |

rol

# Tube-Line 500

## Tail



- 1 tail base
- 2 4 large roller
- 3 1 pc 8 in roller
- 4 1 pc 2 3/8 roller
- 5 1/4 x 1 rebar strip
- 6 hood strip
- 7 2 x 16 hydraulic cylinder
- 8 8 pc 3/8 x 2 1/2 carriage bolt
- 9 8 pc 1/2 x 3 1/2 carriage bolt
- 10 8 pc 1/2 lockwasher
- 11 8 pc 1/2 nut
- 12 8 pc 3/8 lockwasher
- 13 8 pc 3/8 nut
- 14 hinge pin
- 15 roller pin

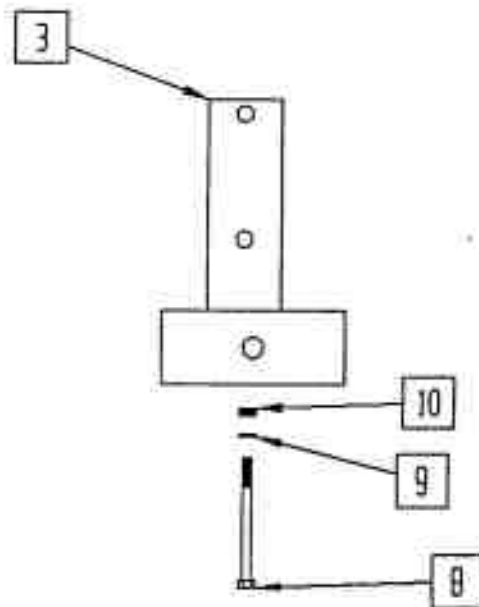
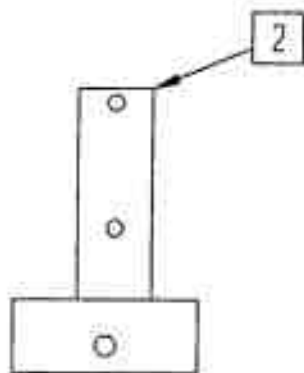
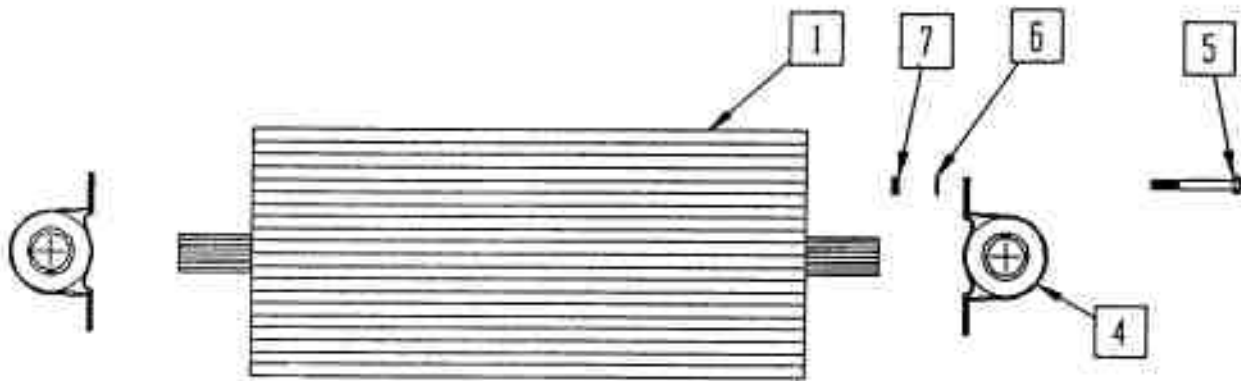
- 16 tail tie bar
- 17 hinge pin
- 18 1/2 x 3 1/2 bolt
- 19 1/2 locknut

ET



# Tube-Line 500

Short roller & bearing

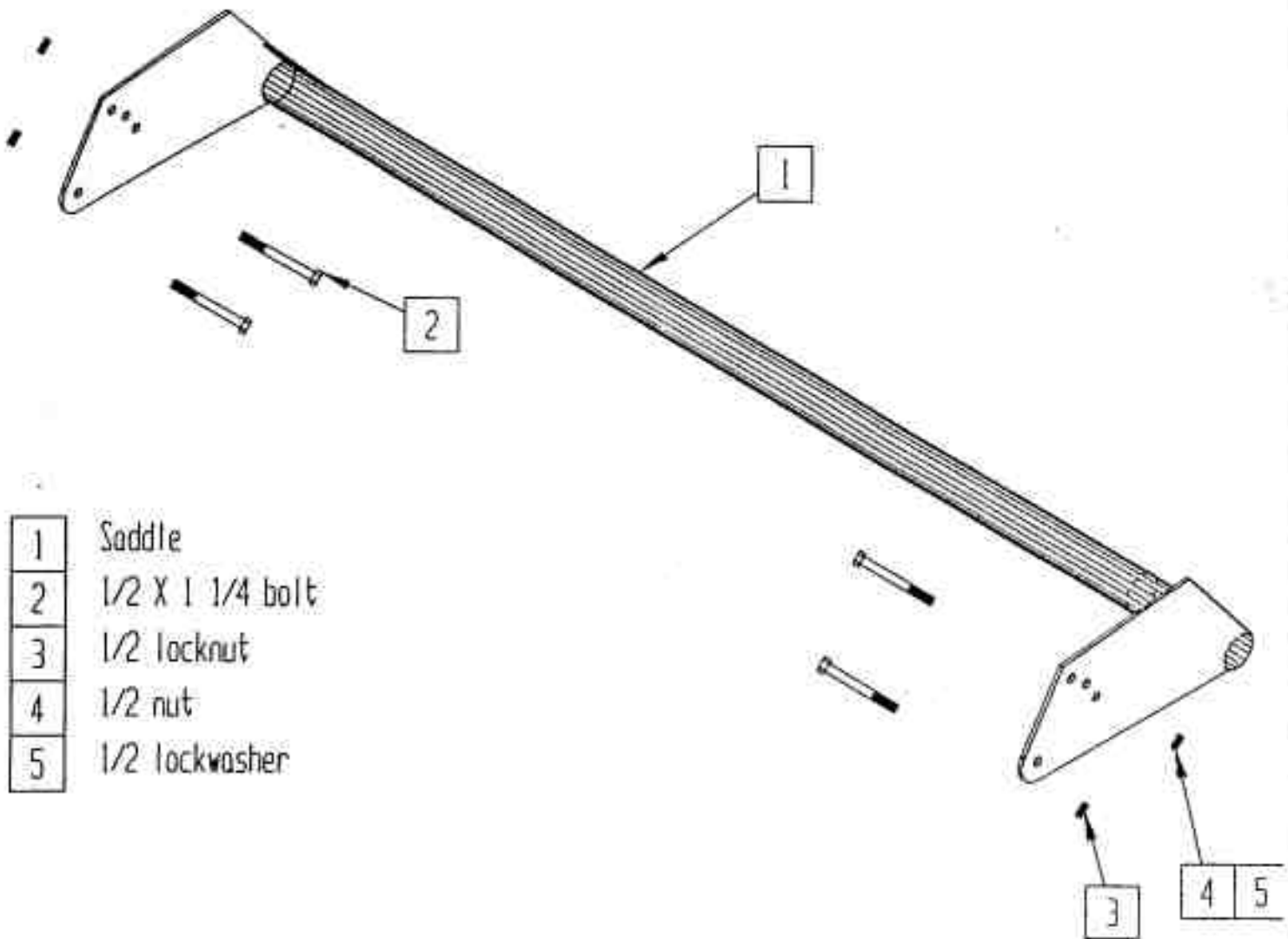


1	Short roller
2	Left bearing bracket
3	Right bearing bracket
4	Bearing
5	3/8 X 1 1/4 bolt
6	3/8 lockwasher
7	3/8 nut
8	1/2 X 4 bolt
9	1/2 lockwasher
10	1/2 nut

SHROL

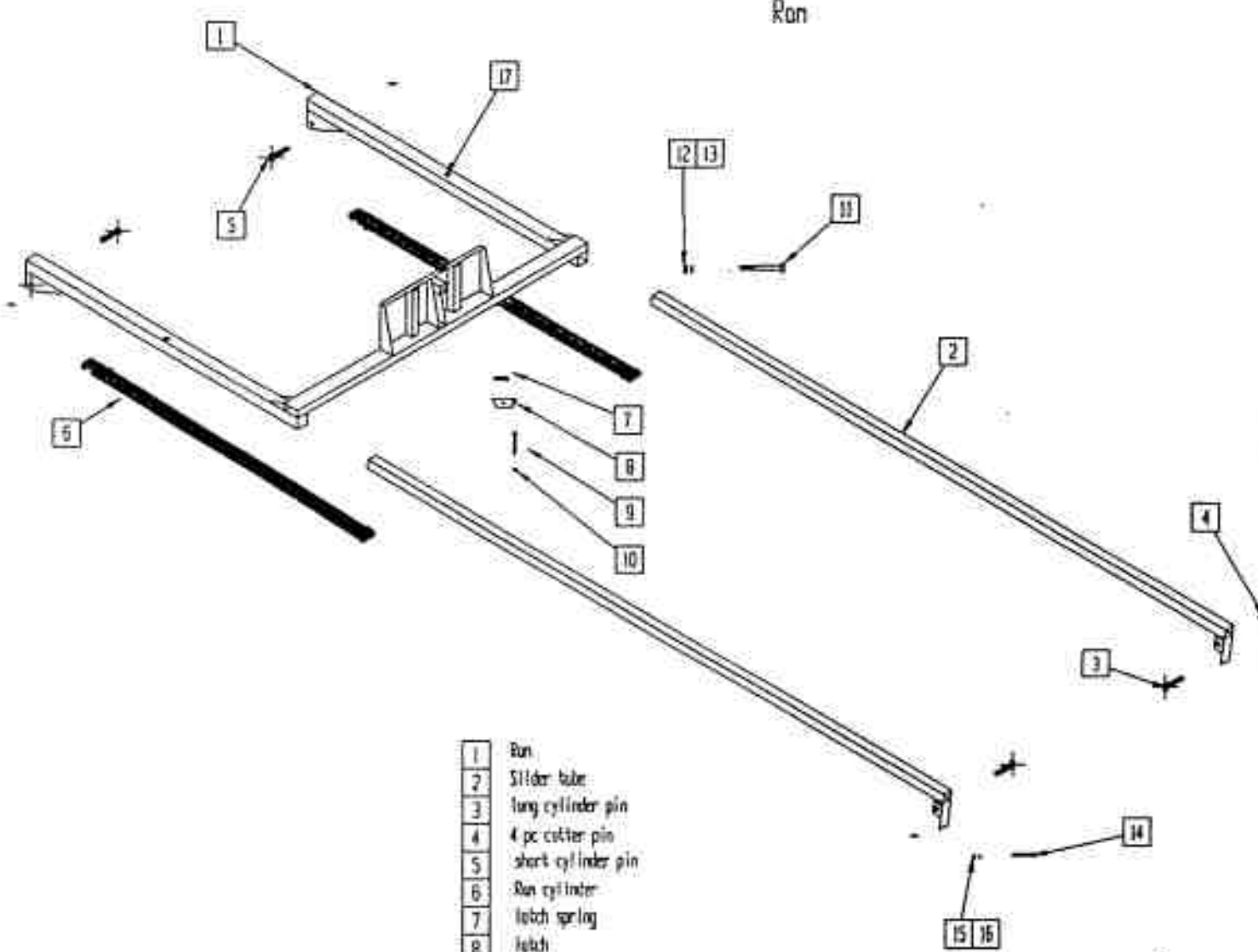
# TubeLine 500

Bale saddle



# Tube-Line 500

Ran

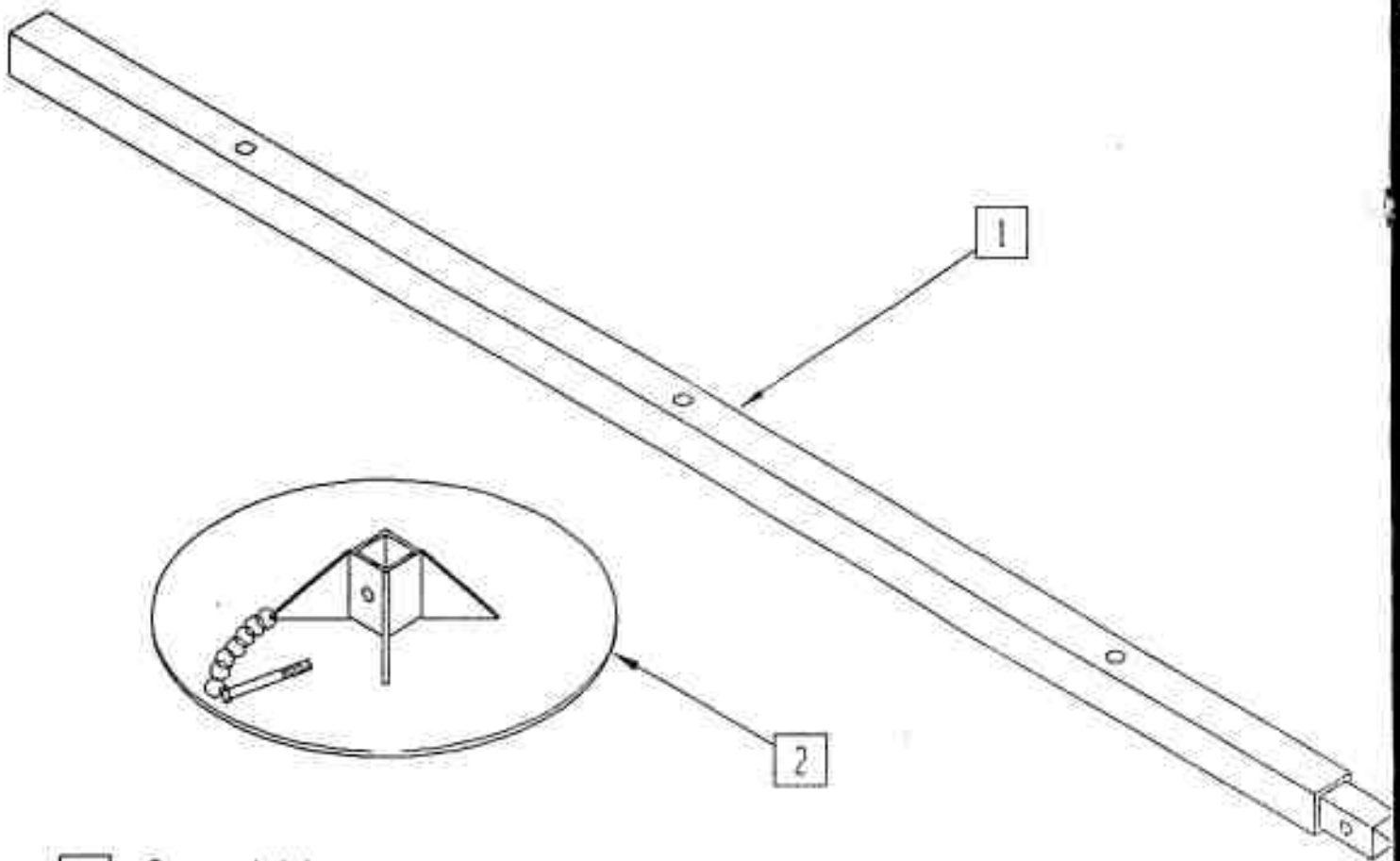


- |    |                              |
|----|------------------------------|
| 1  | Ran                          |
| 2  | Slider tube                  |
| 3  | long cylinder pin            |
| 4  | 4 pc cotter pin              |
| 5  | short cylinder pin           |
| 6  | Ran cylinder                 |
| 7  | latch spring                 |
| 8  | latch                        |
| 9  | 1/2 x 2 1/2 bolt             |
| 10 | 1/2 locknut                  |
| 11 | 2 pc 1/2 x 4 bolt            |
| 12 | 2 pc 1/2 nut                 |
| 13 | 2 pc 1/2 lockwasher          |
| 14 | 4 pc 1/2 x 1 1/2 bolt        |
| 15 | 4 pc 1/2 nut                 |
| 16 | 4 pc 1/2 lockwasher          |
| 17 | 2 pc 1/4 - 20 grease fitting |

Ran

# Tube-Line 500

Push tube & push plate

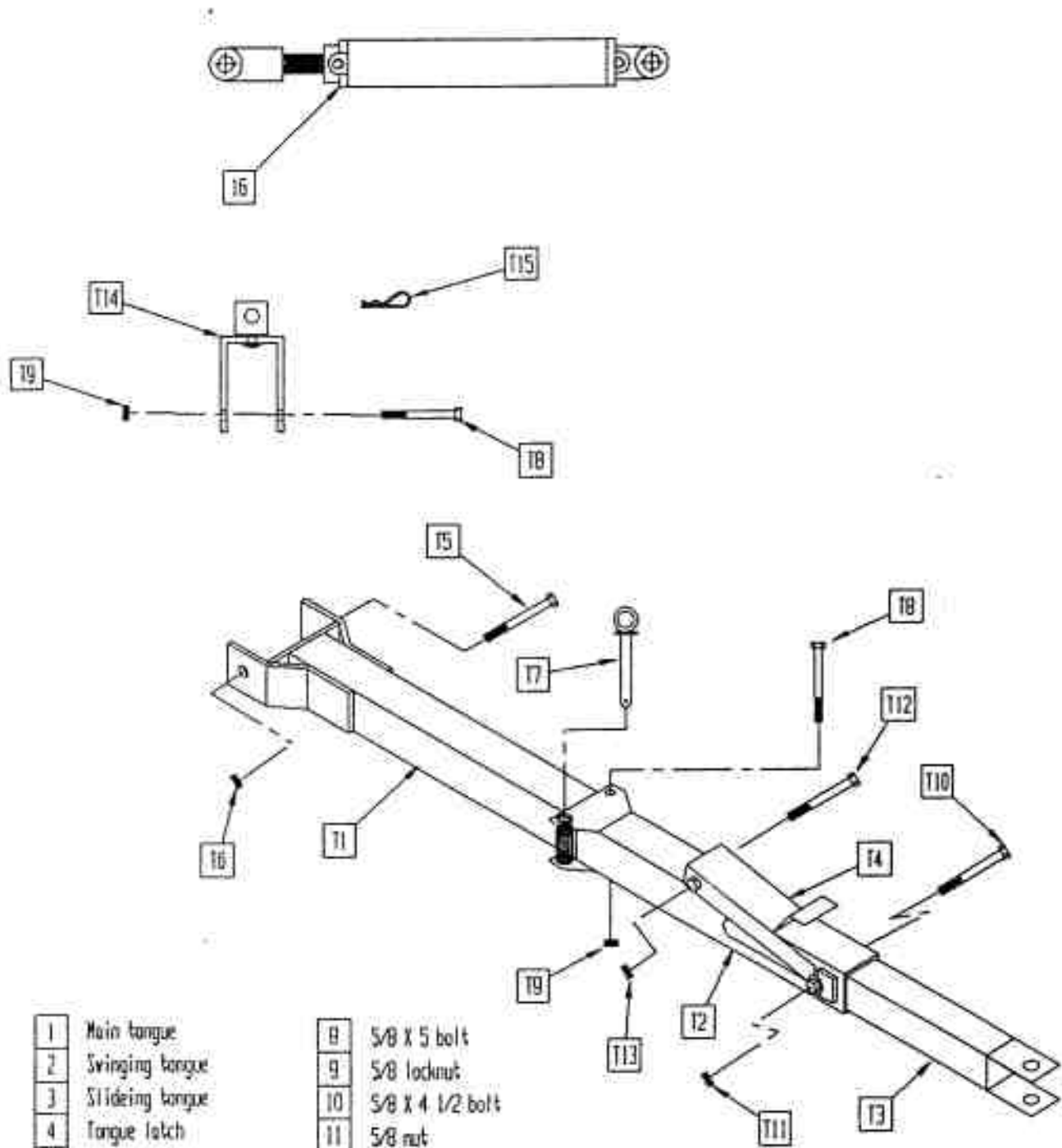


- 1 3 pc push tube
- 2 Push plate

Ptpp

# Tube-Line 500

Tongue



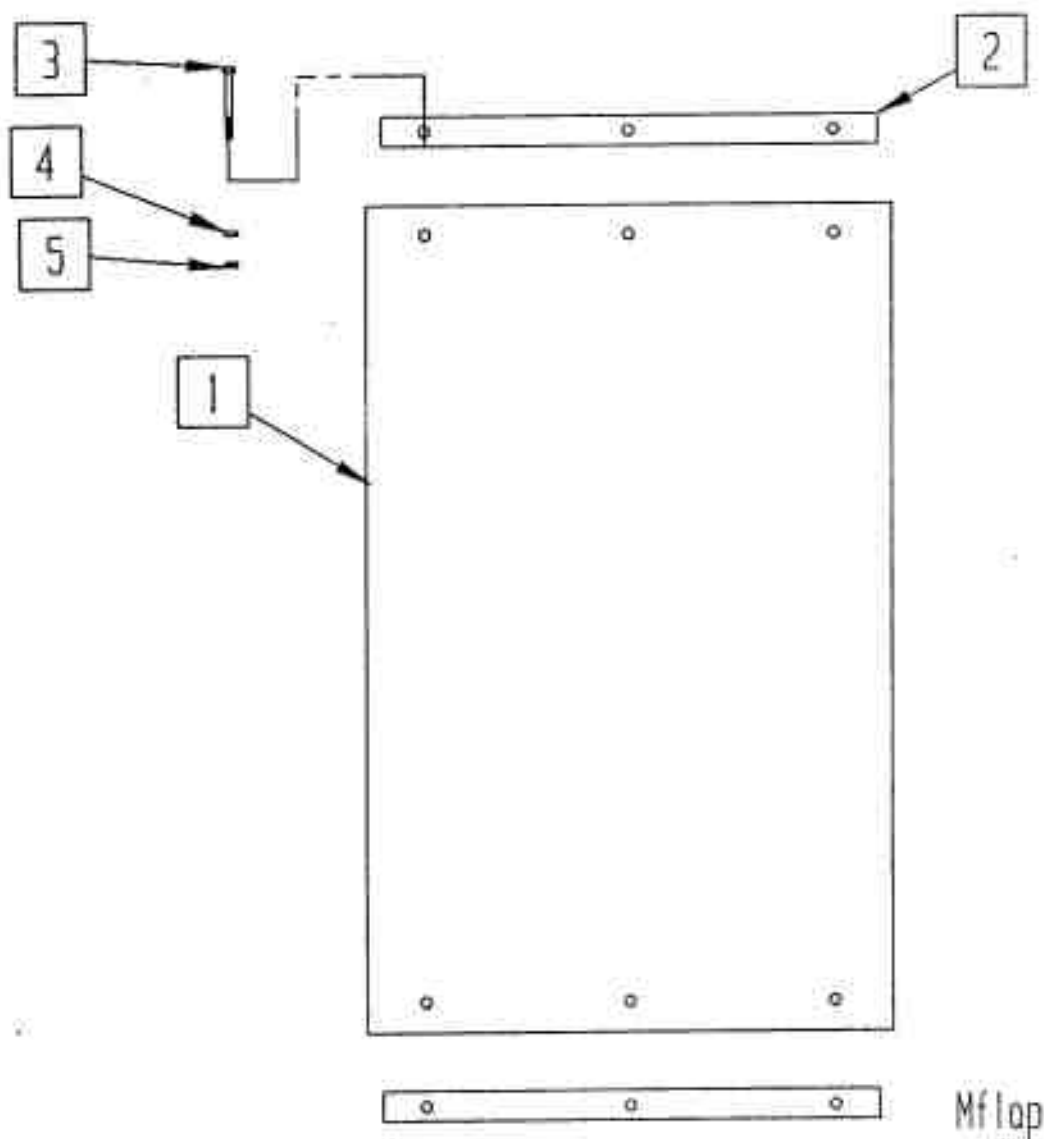
- |   |                  |
|---|------------------|
| 1 | Main tongue      |
| 2 | Swinging tongue  |
| 3 | Sliding tongue   |
| 4 | Tongue latch     |
| 5 | 3/4 X 6 1/2 bolt |
| 6 | 3/4 locknut      |
| 7 | Tongue pin       |

- |    |                     |
|----|---------------------|
| 8  | 5/8 X 5 bolt        |
| 9  | 5/8 locknut         |
| 10 | 5/8 X 4 1/2 bolt    |
| 11 | 5/8 nut             |
| 12 | 5/8 X 4 1/2 bolt    |
| 13 | 5/8 nut             |
| 14 | Tongue Holder       |
| 15 | Hair pin            |
| 16 | 2 1/2 X 16 Cylinder |

1512

# Tube-Line 500

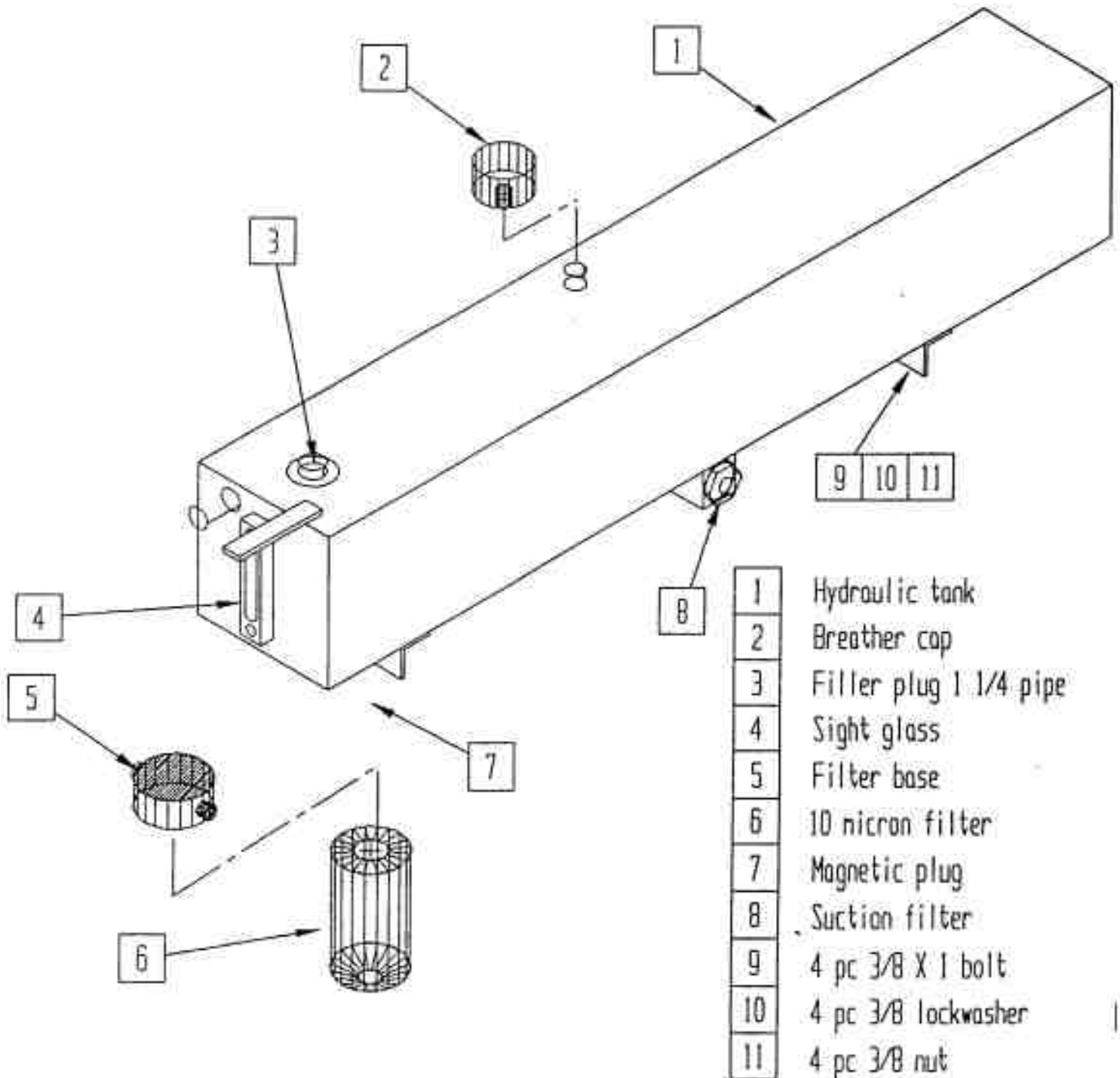
Mud Flap



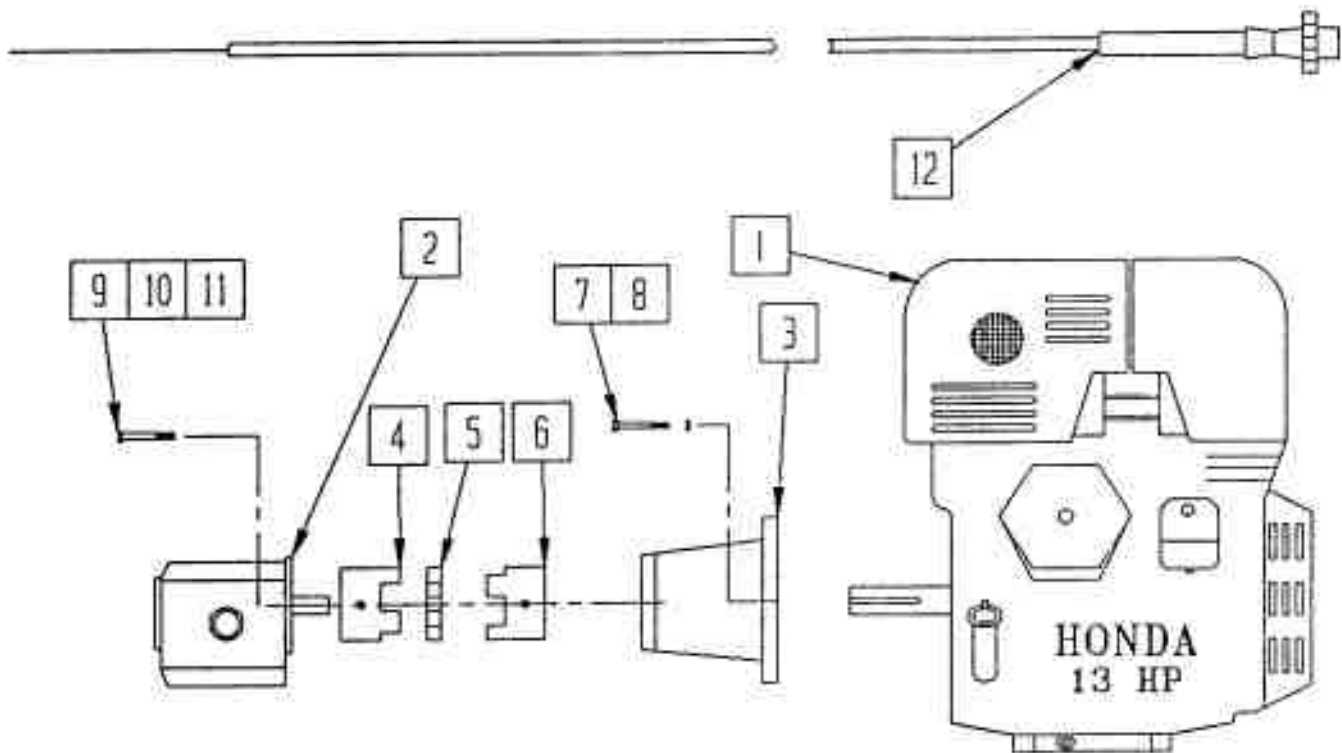
1	mud flap
2	metal strip
3	bolt
4	lockwasher
5	nut

# Tube-Line 500

Hydraulic tank



# Tube-Line 500

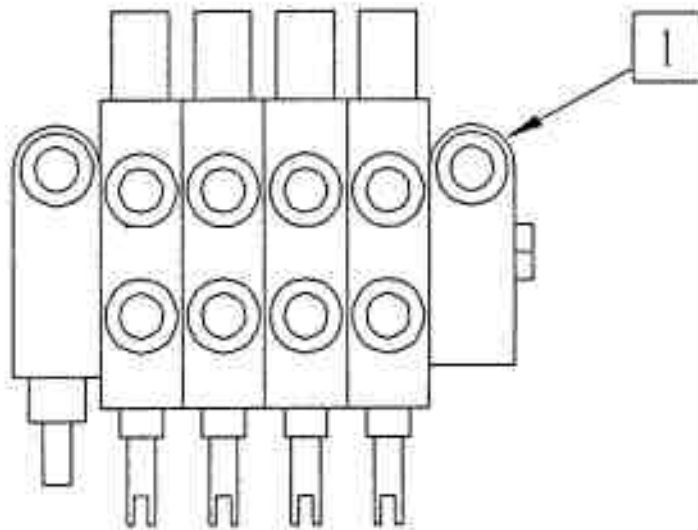
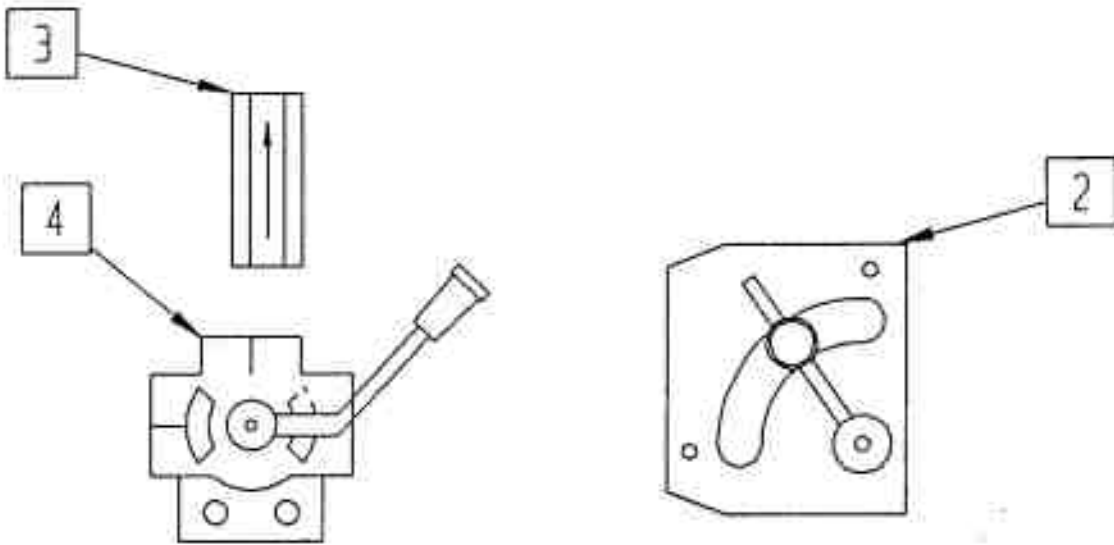


- |   |                          |
|---|--------------------------|
| 1 | 13 Hp HONDA Engine       |
| 2 | Hydraulic Pump           |
| 3 | Engine to pump adaptor   |
| 4 | Love Joy Coupling        |
| 5 | Coupling spacer          |
| 6 | Love Joy Coupling engine |

- |    |                         |
|----|-------------------------|
| 7  | 4 pc 3/8 X 1 bolt       |
| 8  | 4 pc 3/8 lockwasher     |
| 9  | 2 pc 3/8 1 1/4 bolt     |
| 10 | 2 pc 3/8 lockwasher     |
| 11 | 2 pc 3/8 flatwasher     |
| 12 | Throttle Cable (manual) |



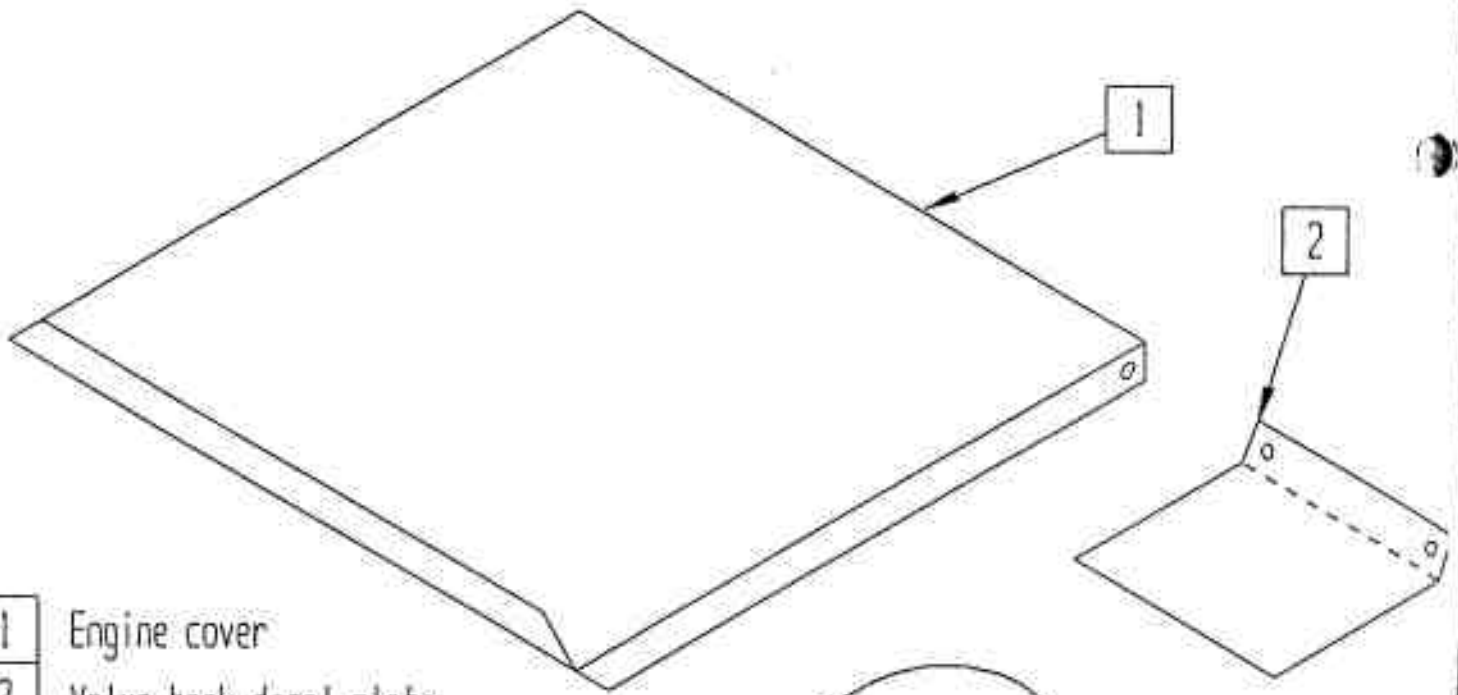
Tube-Line 500  
Manual valve bank



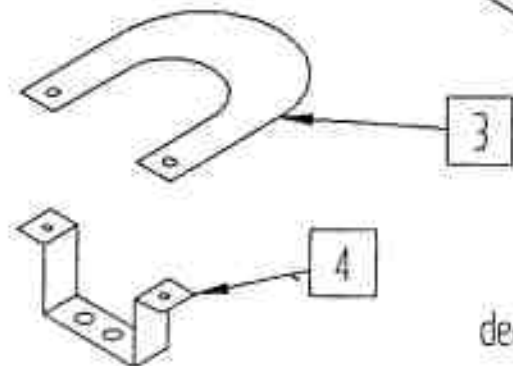
- |   |                            |
|---|----------------------------|
| 1 | CPV0014 Valve stack        |
| 2 | RD - 150 - 16 Flow control |
| 3 | 1/2 Check valve            |
| 4 | Selector Valve             |

# Tube-Line 500

Engine cover & decal plate

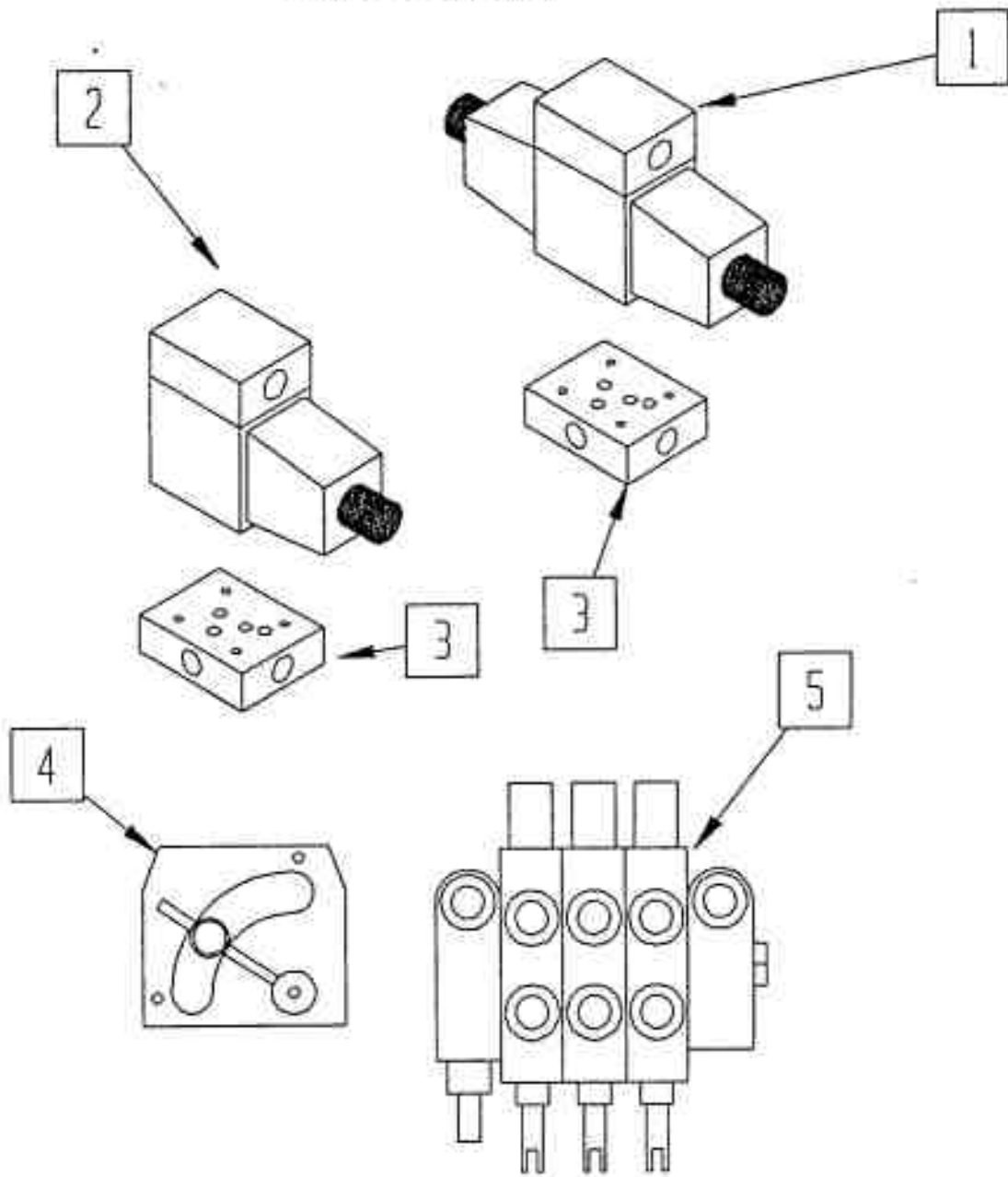


- |   |                                    |
|---|------------------------------------|
| 1 | Engine cover                       |
| 2 | Valve bank decal plate             |
| 3 | Selector valve decal plate         |
| 4 | Selector valve decal plate bracket |



decpl

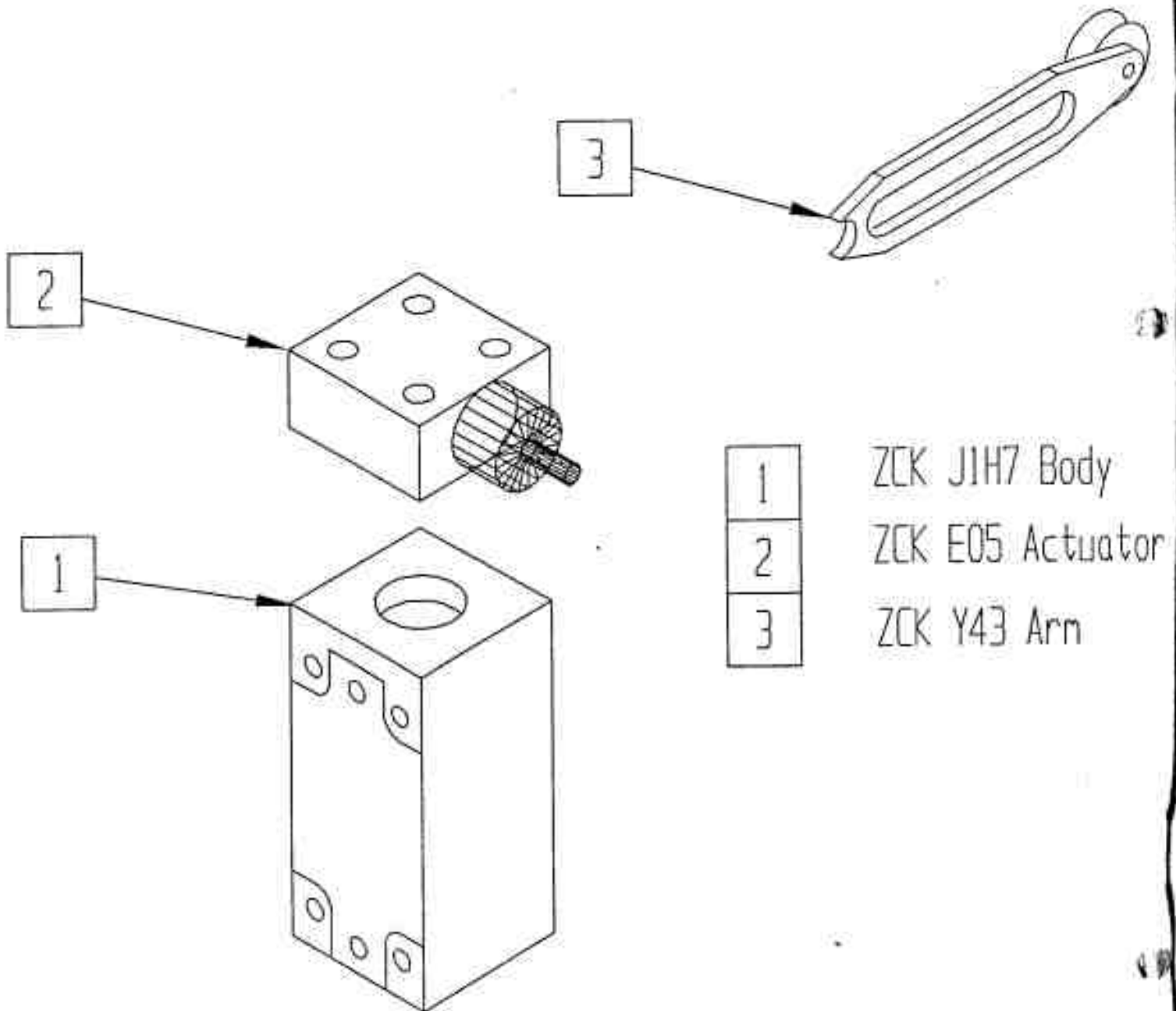
# Tube-Line 500 Electric Solenoid Valve



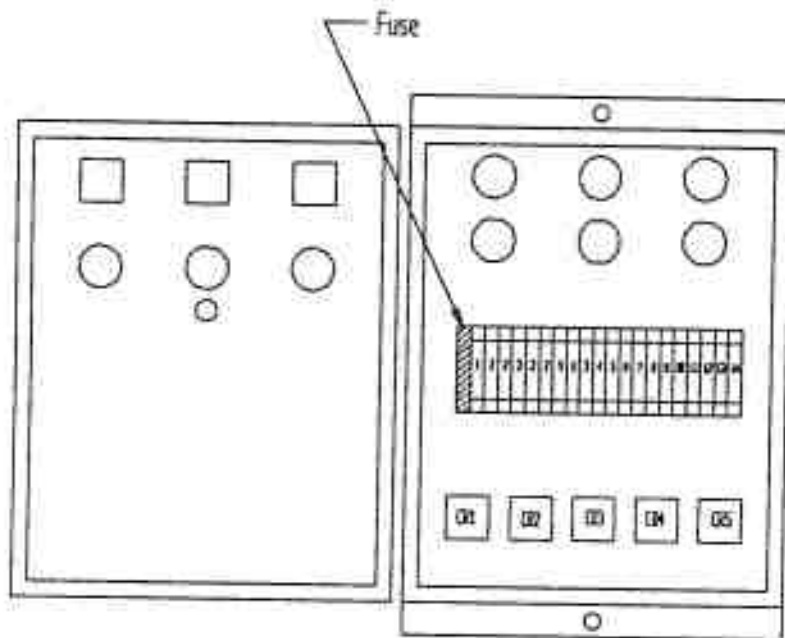
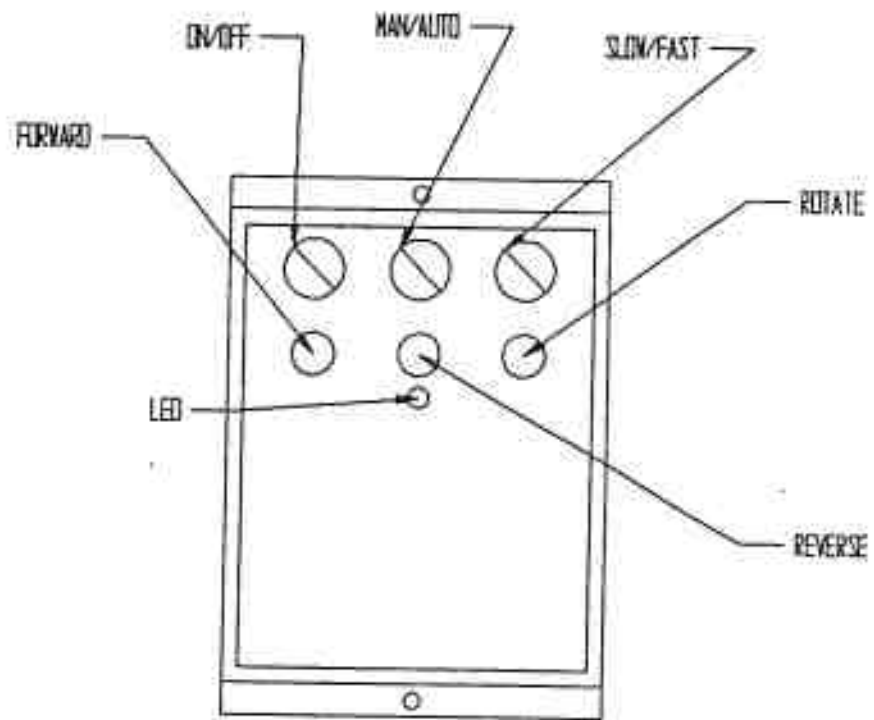
- |   |                                   |
|---|-----------------------------------|
| 1 | VS12M3LEB75L tandem center 12 vdc |
| 2 | VS12M1AGE75L single sol 12 vdc    |
| 3 | A005SPSBS subplate SAE ported     |
| 4 | RD - 150 Flow control             |
| 5 | CPV0013 Valve stack               |

# Tube-Line 500

Telemecanique Limit Switch

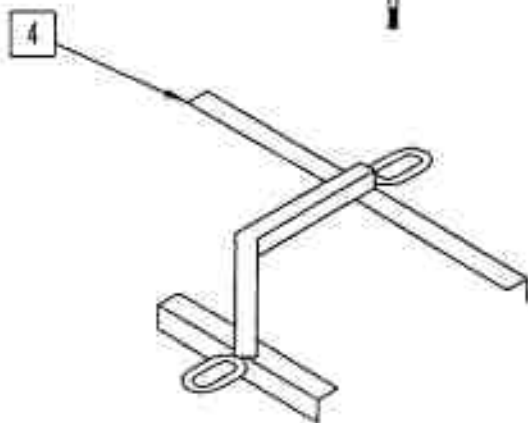
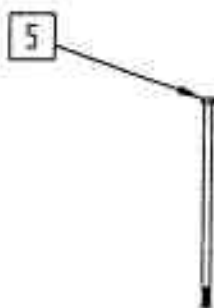
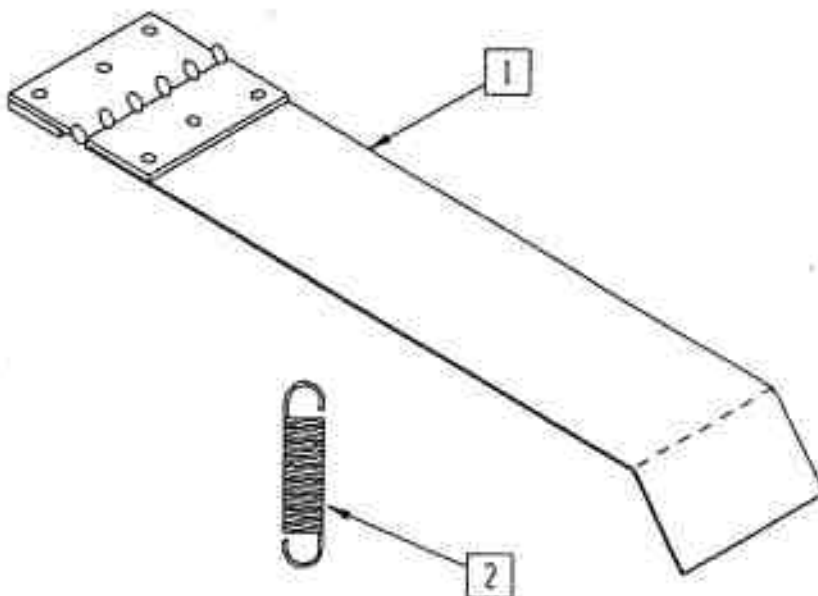
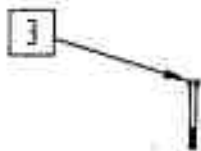


# Tube-Line 500 Control Panel



# Tube-Line 500

Trigger & Battery hold down



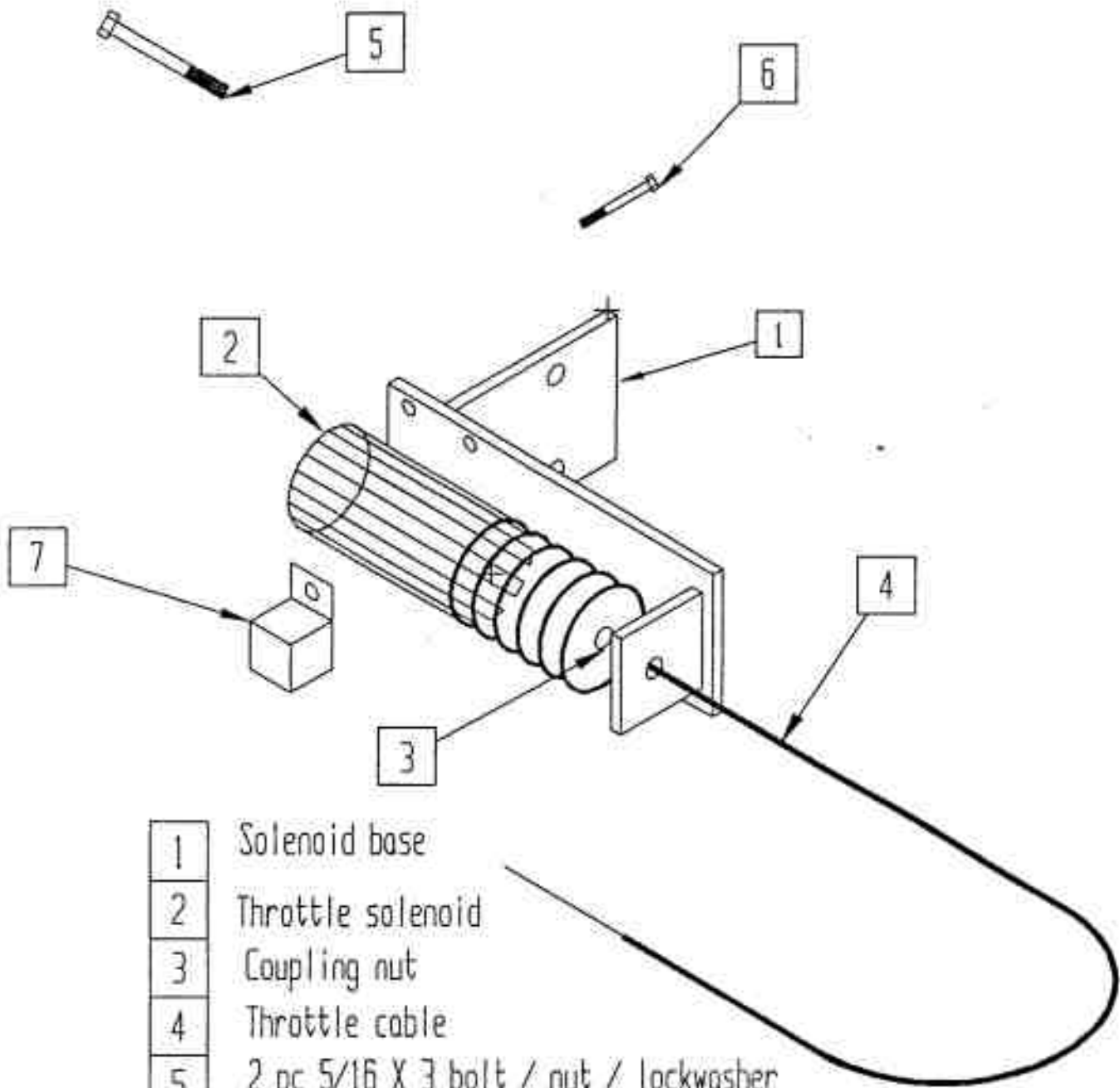
- |   |   |
|---|---|
| 1 | Trigger plate                                   |
| 2 | Trigger spring                                  |
| 3 | 2 pc 1/4 X 1 stove bolt / nut & lockwasher      |
| 4 | Battery hold down                               |
| 5 | 1 pc 5/16 X 7 corrugate bolt / nut / lockwasher |
| 6 | 1 pc 5/16 X 2 bolt / nut / lockwasher           |

Trig

4 B

# Tube-Line 500

Throttle Solenoid (automatic)



- |   |  |
|---|--|
| 1 | Solenoid base                          |
| 2 | Throttle solenoid                      |
| 3 | Coupling nut                           |
| 4 | Throttle cable                         |
| 5 | 2 pc 5/16 X 3 bolt / nut / lockwasher  |
| 6 | 4 pc 1/4 X 3/4 bolt / nut / lockwasher |
| 7 | 70 AMP relay                           |

## Tube-Line500

### Manual Hydraulic Sequence of operation

- 1 With valves in neutral position engine running hydraulic fluid is pumped through valve stack and returned to reservoir.
- 2 Brakes, tail, steering are standard hydraulic cylinder operation.
- 3 Wrap cycle - push wrap valve in, detent will hold valve in position, fluid flows from valve through flow control and is split into 2 circuits, one circuit will go to ram cylinders and the other circuit will go to the hydraulic motor. These circuits are proportioned with the lever on flow control valve. With the selector valve handle in " Both " position flow will go to cylinder and motor. By changing flow control handle, cylinders will speed up or slow down accordingly. At the same time motor will change speed inversely to cylinder ie. when cylinder slows down motor will speed up.
- 4 Selector valve is used to bleed either cylinder or motor flow back to tank or block both circuits causing both cylinder and motor to operate. ie. With handle in wrap only position the fluid that would normally go to the cylinder will flow to tank. With handle in ram only position motor fluid will go to the tank.
- 5 Wrap cycle - pull wrap valve out, detent will hold valve in position, fluid will flow valve port to cylinder causing cylinder to retract. Fluid from the other end of cylinder will return through the check- valve, at flow control back through valve stack and to tank.
- 6 Check valve at motor lets motor freewheel in one direction without cavitating.



**Tube-Line 500**  
Electric Hydraulic  
Sequence of operation

- 1 With valves in neutral position , control panel on/off switch in off position, engine running fluid is pumped through valve stack and returned to reservoir.
- 2 Brakes,tail,steering, are standard hydraulic cylinder operation.
- 3 Wrap cycle fluid flows from power beyond port on valve stack to flow control,and is split into 2 circuits one circuit goes to double solenoid valve for ram cylinder, the other circuit goes to single solenoid valve for hydraulic motor. By moving flow control handle more or less fluid will flow to cylinder or motor ie. as more fluid flows to cylinder less fluid will flow to motor and vise-versa.
- 4 Electric control panel - With "Fast-Slow" switch turned to Slow with "Man-Auto" switch turned to Man turn "On-Off" switch to On, then red LED will light up indicating 12V power is at control circuits, with engine running turn "Fast-Slow switch to Fast and the engine will speed up to max. RPM approx 3500-RPM. Push Forward button in to energize solenoid A on double solenoid valve . Ram cylinder will extend. Push Reverse button to energize solenoid B on same valve. Ram cylinder will retract. Push Rotate button in and hydraulic motor will turn. Push-buttons have to be held in to operate, by releasing them action will stop.
- 5 When "Man-Auto" switch is turned to Auto, engine throttle "Fast-Slow" switch now no longer functions, including push-buttons switches. Depress trigger switch located on bale table, and the engine thottle and hydraulic valve are energised. The engine will speed up and the ram cylinder will extend until the bale on the table starts to move the bale in wrap chamber. This will cause the roller with sprocket to turn, tripping the limit switch thereby energizing the single solenoid valve and turning the wrap motor. When ram is extended to limit switch at end of stroke, single solenoid valve and double solenoid valve A will turn off. Solenoid B will energize causing ram cylinder to retract until it trips limit switch at the front end of bale table, solenoid B and throttle solenoid will turn off, the ram cylinder will stop and engine will idle down.