TS Series Hydraulic/ Pneumatic Lubrication Pump Assemblies

Instructions for Use

Nanjing Bijur Machinery Co. Ltd.

1. Description

The TS series hydraulic/pneumatic pump assembly is a lubrication system making use of reciprocal movement driven by hydraulic oil system or compressed air and is hydraulic oil, compressed air or spring returned. Such a pump assembly consists of TP series hydraulic/pneumatic pumps and T30, T31, T32 or T34 series reservoirs.

Features:

1) High output pressure and adjustable discharge;
2) Low level alarm when microswitch is fitted;
3) Flexible erection of pump and reservoir (integral or separated);
4) Various types of pumps and reservoirs for your choice;
5) Reservoirs can be omitted (directly connect pumps to lubricant barrels);
6) Different configurations available for oil or grease lubrication systems.

The TS series hydraulic/pneumatic pump assemblies are suitable for progressive lubrication systems. Through controllers, fixed quantity of lubricant can be delivered to each lubricating point at predetermined times. The pump assemblies are widely used in lubrication system of construction, transportation, steel, forging and machine tools.

2. Specifications

1) TS Series Hydraulic/Pneumatic Lubrication Pump Assemblies

<table>
<tr><th colspan="2">Pump Assembly</th><th colspan="2">Pump</th><th colspan="2">Reservoir</th><th rowspan="2">Dimensions
A × B × C</th><th rowspan="2">Installation Dimensions
H × L</th></tr>
<tr><th>Model</th><th>PN</th><th>Model</th><th>PN</th><th>Model</th><th>PN</th></tr>
<tr><td rowspan="4">TS30
Hydraulic Pump Assembly</td><td>30505-11</td><td rowspan="2">TP21-2
Hydraulic Pump</td><td rowspan="2">25282-1</td><td>T30P-5A</td><td>30506-1</td><td rowspan="2">559 × 226 × 177</td><td rowspan="11">395 × 165</td></tr>
<tr><td>30540-11</td><td>T30S-5A</td><td>30516-1</td></tr>
<tr><td>31127-11</td><td rowspan="2">TP20-2
Hydraulic Pump</td><td rowspan="2">30075-1</td><td>T30P-5A</td><td>30506-1</td><td rowspan="2">559 × 211 × 177</td></tr>
<tr><td>31129-11</td><td>T30S-5A</td><td>30516-1</td></tr>
<tr><td rowspan="6">TS30
Pneumatic Pump Assembly</td><td>30589-11</td><td>TP12-1
Pneumatic Pump</td><td>30601-1</td><td rowspan="3">T30P-5A</td><td rowspan="3">30506-1</td><td rowspan="6">559 × 226 × 177</td></tr>
<tr><td>30590-11</td><td>TP13-1
Pneumatic Pump</td><td>30602-1</td></tr>
<tr><td>30591-11</td><td>TP23-1
Pneumatic Pump</td><td>30603-1</td></tr>
<tr><td>30592-11</td><td>TP12-1
Pneumatic Pump</td><td>30601-1</td><td rowspan="3">T30S-5A</td><td rowspan="3">30516-1</td></tr>
<tr><td>30593-11</td><td>TP13-1
Pneumatic Pump</td><td>30602-1</td></tr>
<tr><td>30594-11</td><td>TP23-1
Pneumatic Pump</td><td>30603-1</td></tr>
</table>

Note: Some part numbers of TS30/TS31/TS32/TS34 pump assemblies which consist of TP series hydraulic/pneumatic pumps and T30/T31/T32/T34 reservoirs are temporarily

unlisted.

2） TP Series Lubrication Pumps

Model	PN	Discharge (ml/stroke)		Power	Piston Return Method	Pressure Ratio	Input Pressure（Mpa）		Frequency of Operation (Times/Minute)
		Min	Max				Min	Max	
TP11-1	30555-1	0．25	1．11	Hydraulic	Spring Return	6：1	1.75	14	≤15
TP11-2	30556-1				Power Return		0.7		
TP12-1	30601-1			Pneumatic	Spring Return	18：1	0.42	1.4	
TP13-1	30602-1					50：1	0.21	0.35	
TP20-2	30075-1	0．57	2．78	Hydraulic	Power Return	1.2:1	3	26.2	
TP21-2	25282-1					2.25:1	1.4	14	
TP23-1	30603-1			Pneumatic	Spring Return	18:1	0.42	1.4	

3) T30、T31、T32、T34 Series Reservoirs

Model	PN	Lubricant Type	Material	Capacity	Filling Method	Low-Level Switch
T30P-4A	30548-1	NLGI000#-2# Grease	Plastic	5 LB	Quick Connection	No
T30S-4A	33879		Metal			
T30P-5A	30506-1		Plastic			Yes
T30S-5A	30516-1		Metal			
T32P-4A	30551-1		Plastic	10 LB		No
T32S-4A	33881		Metal			
T32P-5A	30552-1		Plastic			Yes
T32S-5A	33873		Metal			
T34P-4A	33871		Plastic			No
T34S-4A	33883		Metal			

T34P-5A	33877		Plastic	12 LB		Yes
T34S-5A	33875		Metal			
T30P-4B	30549-1	N32-N68 Oil Recommended	Plastic	2 QT	Quick Connection	No
T30S-4B	33899		Metal			
T30P-5B	30550-1		Plastic			Yes
T30S-5B	33893		Metal			
T31P-4B	33885		Plastic	3.5 QT		No
T31S-4B	33901		Metal			
T31P-5B	33889		Plastic			Yes
T31S-5B	33895		Metal			
T32P-4B	30553-1		Plastic	5.5 QT		No
T32S-4B	33903		Metal			
T32P-5B	30554-1		Plastic			Yes
T32S-5B	33897		Metal			
T34P-4B	33887		Plastic	7 QT		No
T34S-4B	41015		Metal			
T34P-5B	33891		Plastic			Yes
T34S-5B	33987		Metal			

3. Working Principle

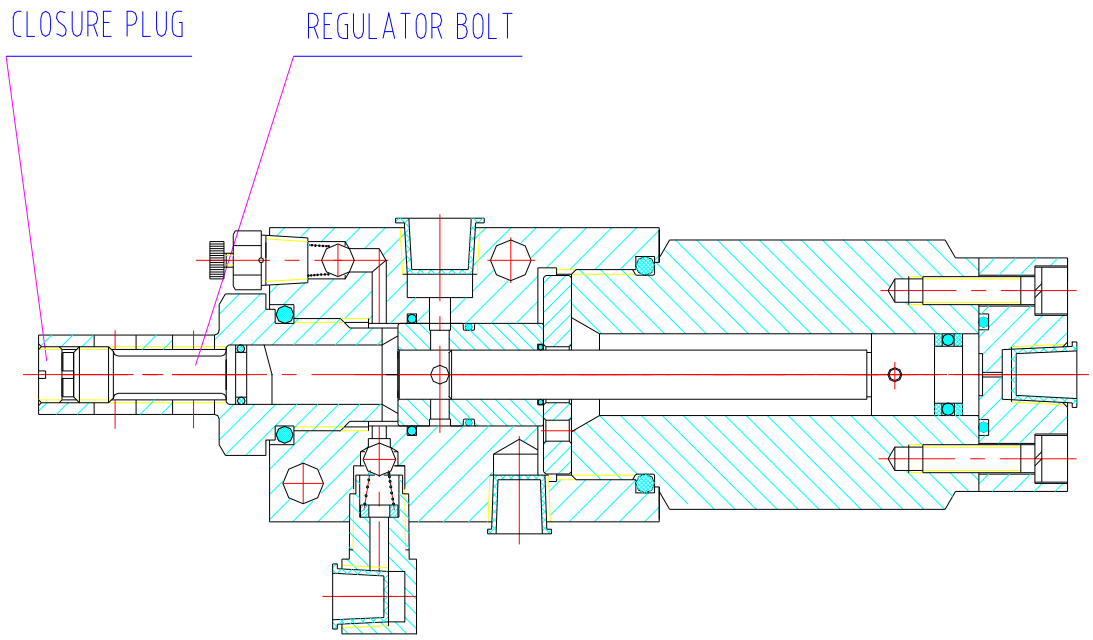
1) Hydraulic pressure or compressed air forces the piston to move forward, forcing lubricant out of the outlet.
2) Using hydraulic pressure, compressed air, or spring force, the piston returns, simultaneously pulling oil or grease from the reservoir into the pump's cavity.

4. Lubricant Discharge volume adjustment method

The user can adjust the discharge volume according to practical needs within a certain range. As shown in the attached drawing, remove the closure plug，adjust the discharge amount through the regulator bolt. The method as following:

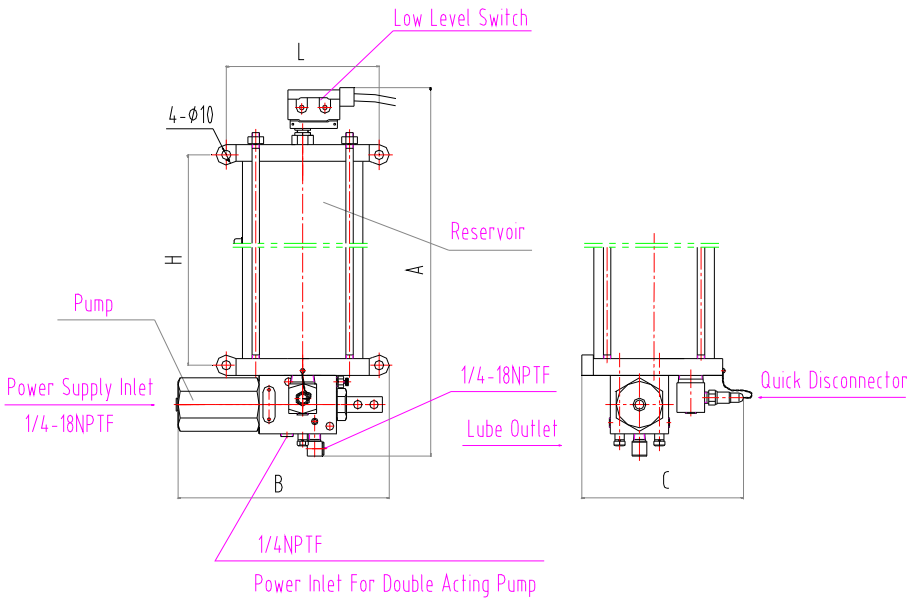
1) turning the bolt clockwise reduces the discharge amount；
2) turning the bold counterclockwise increases the discharge amount.

After completing the adjustment, screw the closure plug back into place.



Discharge Regulator Drawing

5. Exterior and Installation Dimensions



Exterior Drawing

6. Notices Regarding Use

1) Clean, uncontaminated lubricant must be used .
2) Only refill grease through appointed refilling connection .
3) The pump assembly and system components should be examined at regular intervals.
4) Use this product properly according to the officially specified technical parameters.

7. Troubleshooting Chart

Symptom	Possible Cause	Remedy
1. Pump not working	1. Power pressure not sufficient 2. Control unit off or improper settings 3. Dirty lubricant caused pump to lock up 4. Piston O-ring expired/broken	1. Adjust power pressure 2. Turn on or readjust settings properly 3. Replace lubricant and clean piston 4. Replace O-ring
2. Pump not discharging lubricant or discharge amount too little	1. Residual air in reservoir or pump 2. Pump and piston O-ring expired or broken 3.Dirty lubricant caused check valve to fail	1. Unscrew reservoir deflating plug or pump deflating plug until all residual air is purged. 2. Replace O-ring 3. Clean or replace the steel ball within the check valve
3. Low-level switch malfunction	1. Switch connection line broken 2. Switch broken	1. Re-connect 2. Replace switch
4. Air bubbles or leakage within system	1. Insufficient lubricant in reservoir 2. Air bubbles in pump or reservoir 3. Connections in system too loose 4. System connection lacking sleeve or sleeve ineffective	1. Refill lubricant 2. Unscrew reservoir deflating plug or pump deflating plug until all residual air is purged. 3. Further tighten 4. Install or replace sleeve