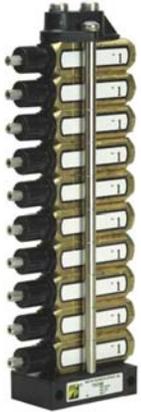


# Master Pneumatic Inc. Introduction to SERV-OIL<sup>®</sup> Air Tools & Hoists





# History

- Developed for the Automotive industry in the late 1960's
- Torque Consistency
- Initial application - Multiple Spindle Nut Runners
- Hand held tools followed



# Old Technology

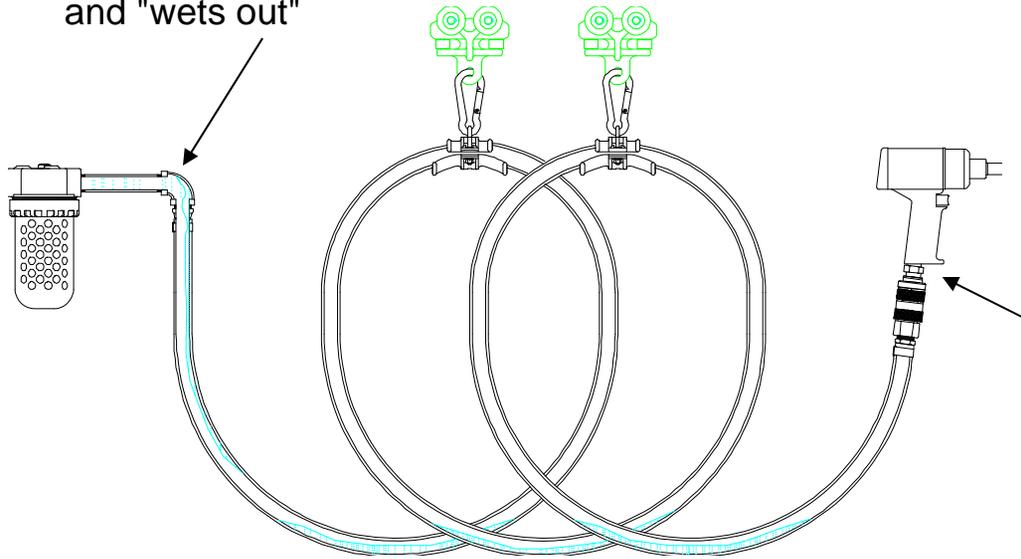
- Mist type lubricators
- Hard to adjust
- Missed the target
- Only type available



# Mist Type

Atomized oil impacts pipe at bends, curves, irregular surfaces, and obstructions and "wets out"

Traditional MIST Lubricator



Inconsistent oil delivery results in **"Feast or Famine"** lubrication

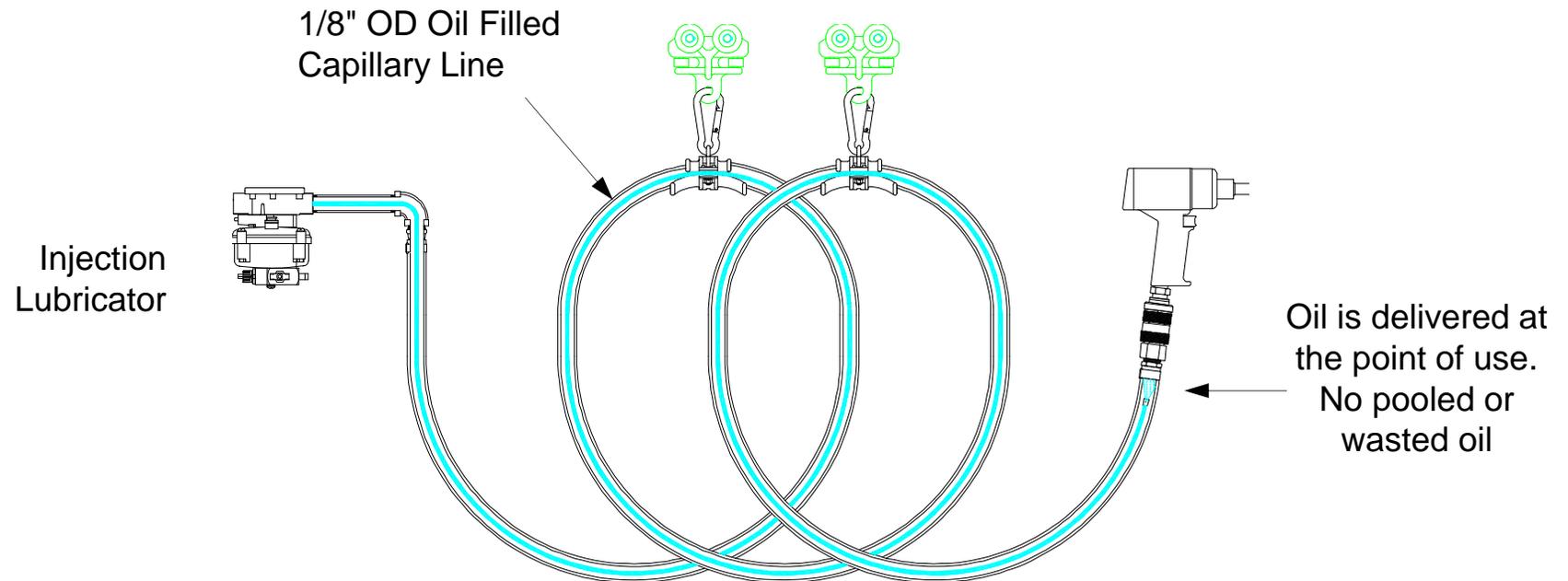
Excess oil exits the exhaust port of the tool creating a hazard and annoying workers

Oil pools in the low spots until air pushes it out in large slugs





# Injection Lubrication

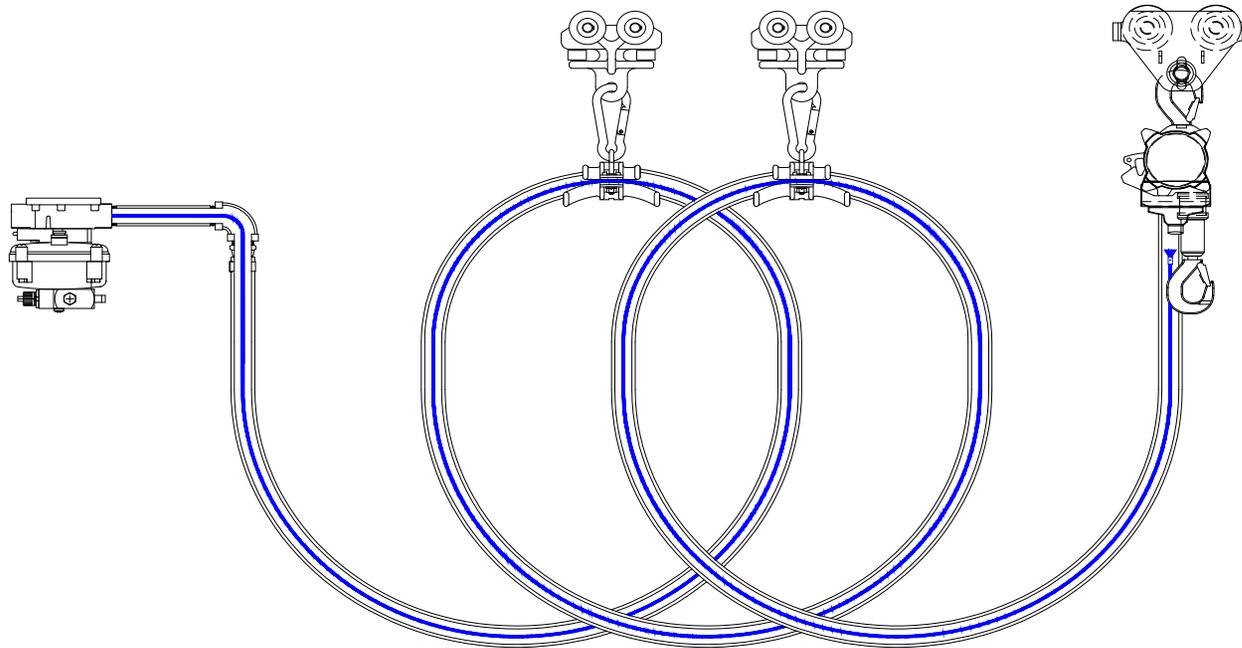


Consistant lubrication results in consistant torque and tool performance



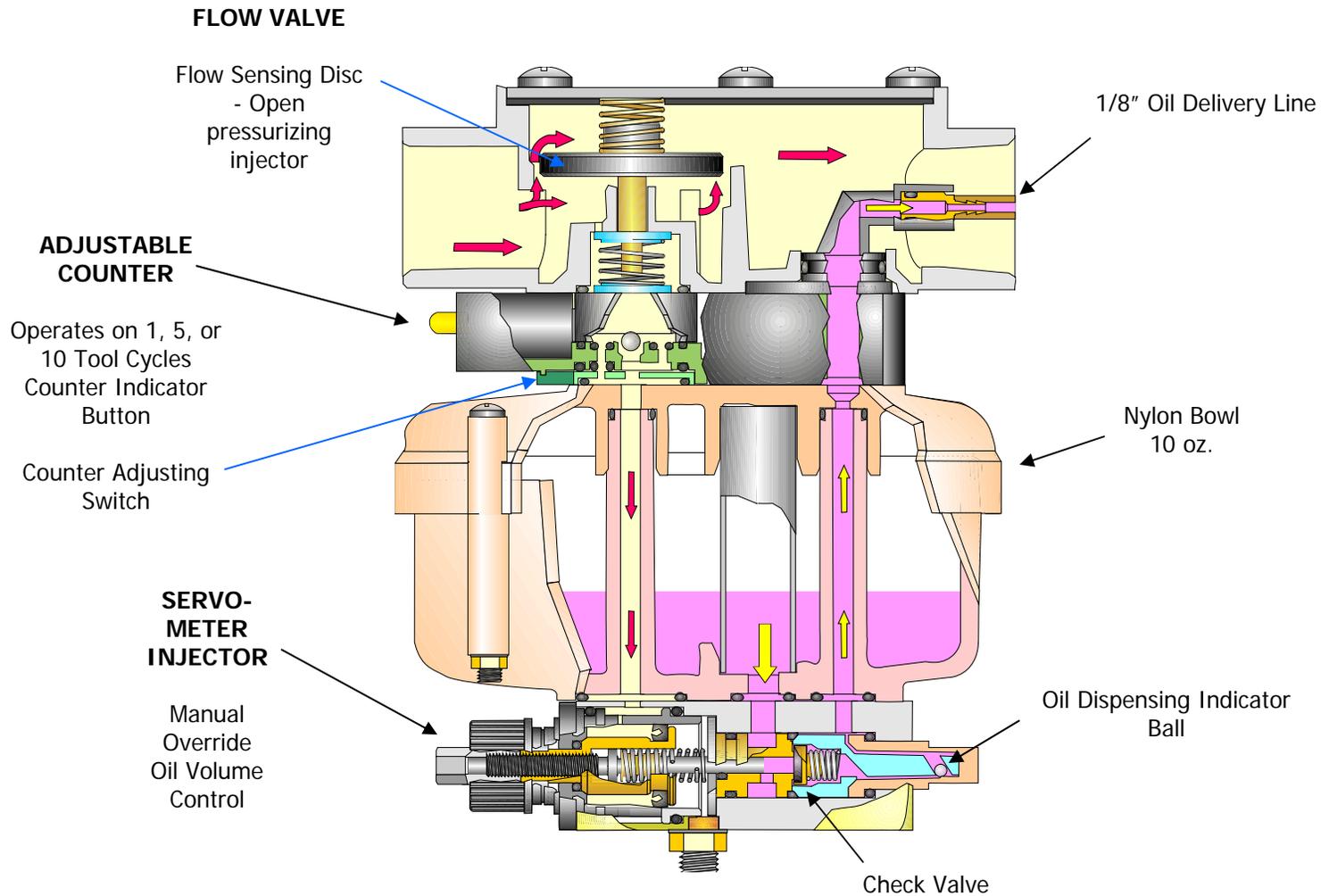


# Injection Lubrication-Hoists



***Precise*** oil delivery volumes, ***delivered consistently***, results in improved hoist performance, longer hoist life, and lower repair costs.

# Single Point Lubricator (SPL)



# Single Point Lubricator (SPL)

- 1/2" & 3/4" NPT and BSPP
- Fluid Output 0.015, 0.030 & 0.060mL
- Shut and NON Shut Off
- Available with and without integral reservoir
- Available with Frequency Generator



# Fluid Output

- Fluid Output 0.015, 0.030 & 0.060mL  
(Historically referred to in drops- ½, 1 & 2)
- Volume Control Knob  
(Clockwise+ CCW-)
- .015 & .030mL down to 10%
- .060mL down to 30%



# Fluid Output (Cont'd)

1/2 Drop				1 Drop				2 Drop			
Clicks	ml	Clicks	ml	Clicks	ml			Clicks	ml		
Full Volume 46	0.0150	23	0.0083	Full Volume 46	0.0300	23	0.0165	Full Volume 46	0.0600	23	0.0390
45	0.0147	22	0.0080	45	0.0294	22	0.0159	45	0.0591	22	0.0381
44	0.0144	21	0.0077	44	0.0288	21	0.0154	44	0.0582	21	0.0372
43	0.0141	20	0.0074	43	0.0282	20	0.0148	43	0.0573	20	0.0363
42	0.0138	19	0.0071	42	0.0277	19	0.0142	42	0.0563	19	0.0353
41	0.0135	18	0.0068	41	0.0271	18	0.0136	41	0.0554	18	0.0344
40	0.0132	17	0.0065	40	0.0265	17	0.0130	40	0.0545	17	0.0335
39	0.0129	16	0.0062	39	0.0259	16	0.0124	39	0.0536	16	0.0326
38	0.0127	15	0.0059	38	0.0253	15	0.0118	38	0.0527	15	0.0317
37	0.0124	14	0.0056	37	0.0247	14	0.0112	37	0.0518	14	0.0308
36	0.0121	13	0.0053	36	0.0241	13	0.0107	36	0.0509	13	0.0299
35	0.0118	12	0.0050	35	0.0236	12	0.0101	35	0.0500	12	0.0290
34	0.0115	11	0.0047	34	0.0230	11	0.0095	34	0.0490	11	0.0280
33	0.0112	10	0.0045	33	0.0224	10	0.0089	33	0.0481	10	0.0271
32	0.0109	9	0.0042	32	0.0218	9	0.0083	32	0.0472	9	0.0262
31	0.0106	8	0.0039	31	0.0212	8	0.0077	31	0.0463	8	0.0253
30	0.0103	7	0.0036	30	0.0206	7	0.0071	30	0.0454	7	0.0244
29	0.0100	6	0.0033	29	0.0200	6	0.0066	29	0.0445	6	0.0235
28	0.0097	5	0.0030	28	0.0195	5	0.0060	28	0.0436	5	0.0226
27	0.0094	4	0.0027	27	0.0189	4	0.0054	27	0.0427	4	0.0217
26	0.0091	3	0.0024	26	0.0183	3	0.0048	26	0.0417	3	0.0207
25	0.0088	2	0.0021	25	0.0177	2	0.0042	25	0.0408	2	0.0198
24	0.0086	1	0.0018	24	0.0171	1	0.0036	24	0.0399	1	0.0189

Non Shut-Off





# Fluid Output (Cont'd)

- Pulse Counter
  - 1,5 or 10 tool cycles
  - Double Counter (add 25, 50,100)
- Frequency Generator
  - Constant flow applications
    - Every 1-30 seconds
    - Extend With Pulse Counter





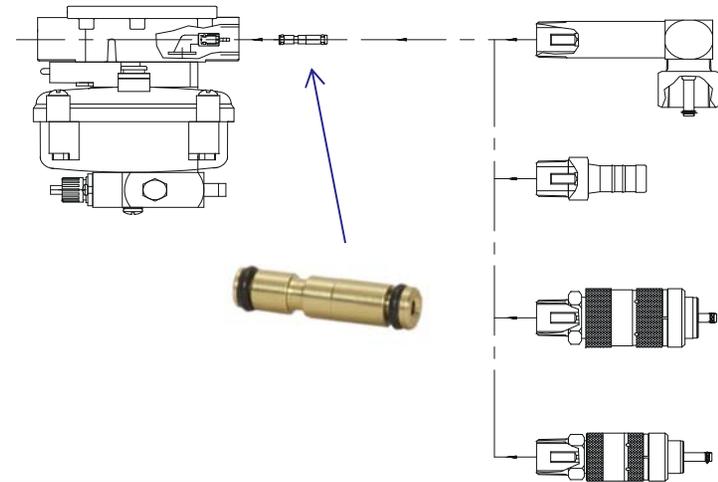
# SPL to Tool

- Manually connect
  - Connect to the SPL
  - Connect the Check Valve
  - Tubing to 4-6" from tool



# Fluid Output (Cont'd)

- Coaxial Connections
  - Threaded
  - Quick Connect





# Fluid Output (Cont'd)

- Type of fluid
  - Specified by the manufacturer of the air motor
  - Fluid Compatibility
- Injector setting
  - 0.015 & 0.030mL 46 clicks
  - 0.060mL 46 clicks ( Non Shut Off )
  - 0.030mL for 20 ft<sup>3</sup> air used

# Coaxial Tool Hose Assemblies

- Type of Hose
  - Straight or Coiled (Tails)
  - Length
  - ID
  - Fittings on each end
  - Urethane or Reinforced Urethane



# Low Flow Tools

- Small Air Tools
- Higher Priced than the past



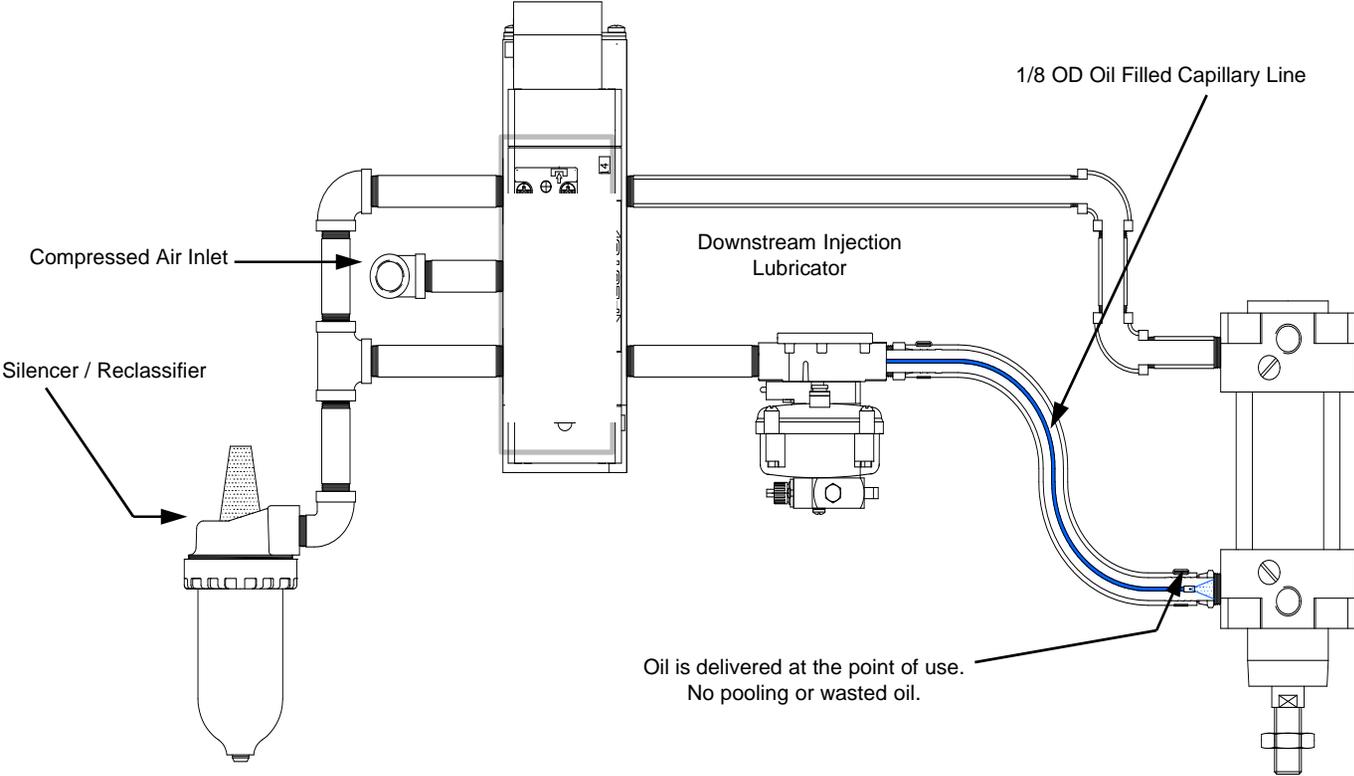
# Portable SPL

- Belt Mount
- Foundries
- Aircraft Assembly
- Ship Building
- ??



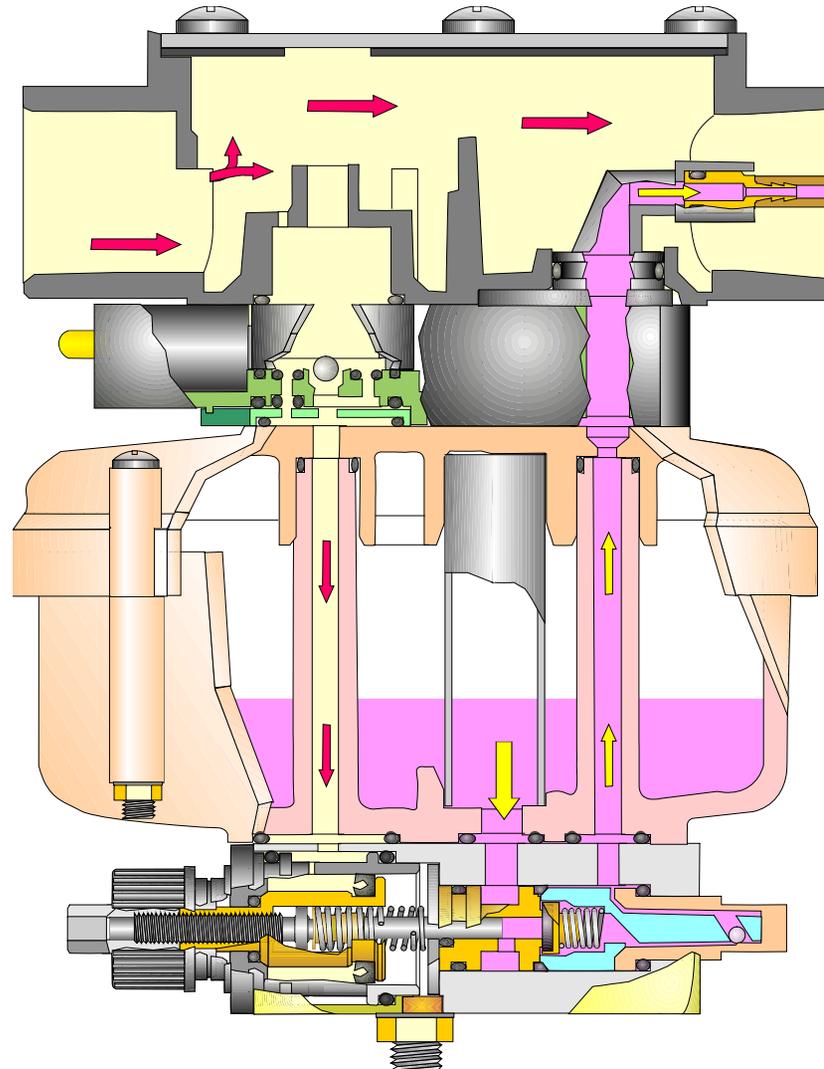
# Downstream SPL's

## "DOWNSTREAM INJECTION" METHOD



# Downstream SPL

- Why
- Difference



Remember



Specify Serv-Oil

Pneumatic tools receiving a small amount of lubrication, consistently, will:

- ◇ Increase tool life 2 1/2– 3X
- ◇ Reduce repair costs by 50-90%
- ◇ Improve tool performance (torque consistency, power, heat, etc.)
- ◇ Reduce oil in environment improving health & safety conditions
- ◇ Improve productivity







Thank you!