

Oil and Grease Piston Distributors

313759B
EN

*- For injecting lubricant from an intermittent pump system.
Suitable for use in centralized, single-line, lubrication systems. -*

Models: Page 2 (includes working pressure)



Important Safety Instructions

Read all warnings and instructions in this manual. Save these instructions.

WARNING



PRESSURIZED EQUIPMENT HAZARD

Fluid from the gun/dispense valve, leaks, or ruptured components can splash in the eyes or on skin and cause serious injury.

- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.
- Tighten all fluid connections before operating the equipment.
- Check hoses, tubes, and couplings daily. Replace worn or damaged parts immediately.

Models

3400 (Oil) / 3410 (Grease) Single Point Series

Part No.	Fitting & Sleeve	Fluid		Dispense Volume (cm ³)	Operating Pressure Range psi (bar)	Viscosity
		Oil	Grease			
121654	M8 x 1		✓	.01	188 - 653 (13 - 45)	NLGI 000-00
121655	M8 x 1		✓	.03	188 - 653 (13-45)	NLGI 000-00
121656	M8 x 1		✓	.06	188 - 653 (13 - 45)	NLGI 000-00
121657	M8 x 1		✓	.10	188 - 653 (13-45)	NLGI 000-00
122804	M10 x 1	✓		.01	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122805	M10 x 1	✓		.03	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122806	M10 x 1	✓		.06	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122807	M10 x 1	✓		.10	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122808	M10 x 1	✓		.16	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122809	M10 x 1		✓	.01	188 - 653 (13 - 45)	NLGI 000-00
122810	M10 x 1		✓	.03	188 - 653 (13 - 45)	NLGI 000-00
122811	M10 x 1		✓	.06	188 - 653 (13 - 45)	NLGI 000-00
122812	M10 x 1		✓	.10	188 - 653 (13 - 45)	NLGI 000-00
558306	M8 x 1	✓		.01	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
558307	M8 x 1	✓		.03	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
558308	M8 x 1	✓		.06	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
558309	M8 x 1	✓		.10	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
558310	M8 x 1	✓		.16	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S

3500 (Oil) / 3510 (Grease) Single Point Series

Part No.	Fitting & Sleeve	Fluid		Dispense Volume (cm ³)	Operating Pressure Range psi (bar)	Viscosity
		Oil	Grease			
112817	M12 x 1		✓	.1	188 - 653 (13 - 45)	NLGI 000-00
121658	M10 x 1	✓		.1	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121659	M10 x 1	✓		.2	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121660	M10 x 1	✓		.4	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121661	M10 x 1	✓		.6	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121662	M10 x 1		✓	.1	188 - 653 (13 - 45)	NLGI 000-00
121663	M10 x 1		✓	.2	188 - 653 (13 - 45)	NLGI 000-00
121664	M10 x 1		✓	.3	188 - 653 (13-45)	NLGI 000-00
122813	M12 x 1	✓		.1	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122814	M12 x 1	✓		.2	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122815	M12 x 1	✓		.4	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122816	M12 x 1	✓		.6	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122818	M12 x 1		✓	.2	188 - 653 (13 - 45)	NLGI 000-00
122819	M12 x 1		✓	.3	188 - 653 (13 - 45)	NLGI 000-00

3900 (Oil) / 3910 (Grease) Single Point Series

Part No.	Fitting & Sleeve	Fluid		Dispense Volume (cm ³)	Operating Pressure Range psi (bar)	Viscosity
		Oil	Grease			
121665	M14 x 1'5	✓		.2	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121666	M14 x 1'5	✓		.4	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121667	M14 x 1'5	✓		.6	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121668	M14 x 1'5	✓		1.0	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121669	M14 x 1'5	✓		1.5	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
121670	M14 x 1,5		✓	.1	348 - 653 (24 - 45)	NLGI 000-00
121671	M14 x 1'5		✓	.2	348 - 653 (24-45)	NLGI 000-00
121672	M14 x 1'5		✓	.3	348 - 653 (24-45)	NLGI 000-00
122820	M12 x 1	✓		.2	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122821	M12 x 1	✓		.4	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122822	M12 x 1	✓		.6	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122823	M12 x 1	✓		1.0	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122824	M12 x 1	✓		1.5	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122825	M12 x 1		✓	.1	348 - 653 (24 - 45)	NLGI 000-00
122826	M12 x 1		✓	.2	348 - 653 (24 - 45)	NLGI 000-00
122827	M12 x 1		✓	.3	348 - 653 (24 - 45)	NLGI 000-00

Complete Castings

Part No.	Series	No. Outlets	Fluid		Plug Color	Operating Pressure Range psi (bar)	Viscosity
			Oil	Grease			
122841	3400	2	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122861	3400	3	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122862	3400	5	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122863	3410	2		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00
122864	3410	3		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00
122865	3410	5		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00
122866	3500	2	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122868	3500	3	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122869	3500	5	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122885	3510	2		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00
122886	3510	3		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00
122887	3510	5		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00
122888	3900	2	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122889	3900	3	✓		Red	145 - 653 (10 - 45)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S

Part No.	Series	No. Outlets	Fluid		Plug Color	Operating Pressure Range psi (bar)	Viscosity
			Oil	Grease			
122890	3910	2		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00
122891	3910	3		✓	White	145 - 653 (10 - 45)	(Oil) 32 to 2000 MM ² /S .047 to 3.1 in. 2/S (Grease) NLGI 000-00

Direct to Bearing Piston Distributors (Lubricant - Oil)

Part No.	Flow	Operating Pressure Range psi (bar)	Viscosity
122789	0'03 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122790	0'06 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122791	0'1 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122792	0'03 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122793	0'06 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122794	0'1 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122795	0'03 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122796	0'06 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122797	0'1 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122798	0'1 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122799	0'2 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122800	0'3 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S
122801	0'4 cm ³	261 - 725 psi (18 - 50 bar)	32 to 2000 MM ² /S .047 to 3.1 in. 2/S

Metering Nipples

Part No.	For Use on Series	Nipple Index	Dispense Volume (cm3)	Corresponding Casting plug Color
558311	3400	2	.03	Red
558312	3400	3	.06	Red
558313	3400	4	.10	Red
558314	3400	5	.16	Red
558324	3410	2	.03	White
558325	3410	3	.06	White
558326	3410	4	.10	White
558315	3500	4	.10	Red
558316	3500	5	.20	Red
558317	3500	6	.40	Red
558318	3500	7	.60	Red
558327	3510	4	.1	White
558328	3510	5	.2	White
558329	3510	6	.3	White
558319	3900	5	.2	Red
558320	3900	6	.4	Red
558321	3900	7	.6	Red
558322	3900	8	1.0	Red
558323	3900	9	1.5	Red
558330	3910	4	.1	White
558331	3910	5	.2	White
558332	3910	6	.3	White
122989 ¹	3400	1	.01	Red
122990 ²	3410	1	.01	White

¹ Part No. 122989 is a kit consisting of a nipple and corresponding piston for oil. Must remove existing piston and casting when replacing with 3400 Series, Index 1 nipple.

² Part No. 122990 is a kit consisting of a nipple and corresponding piston for grease. Must remove existing piston when replacing with 3410 Series, Index 1 nipple.

Pressure Relief Procedure



The equipment may be pressurized or may become pressurized by an automatic lubrication cycle initiated by a lubrication controller such as a timer.

1. Disconnect power to the timer.
2. Consult your pump manual for any additional pressure relief instructions related to your pump module.

Single Line Circuit (Fig. 1)

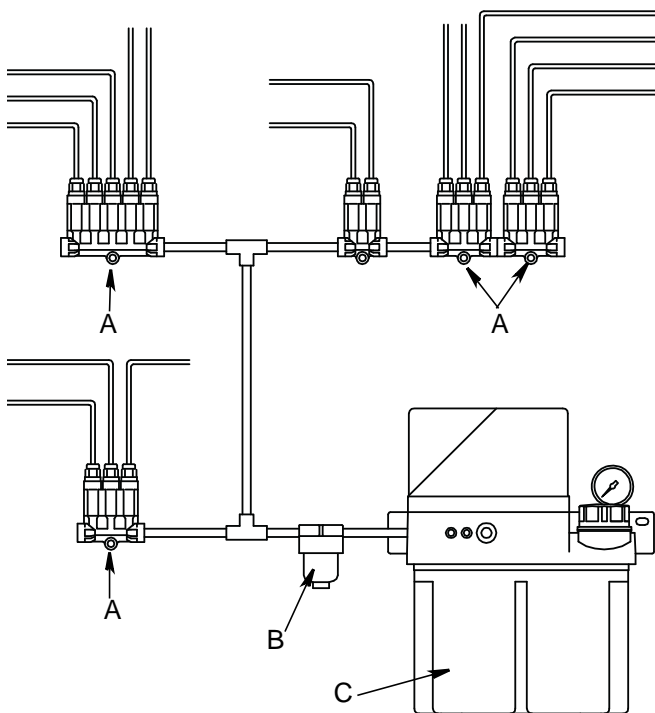


FIG. 1

- A Doser
- B Pressure Filter
- C Lubrication Unit

Single Point to Manifold Assembly Instructions

1. Install gasket washer between piston distributor and manifold.
2. Thread in manifold. Torque to 17 in.-lbs (2 N.m).

Direct to Bearing Option (Fig. 2)

Used in centralized, single line lubrication systems, injecting lubricant from an intermittent pump system. The piston distributor is mounted directly on the grease point.

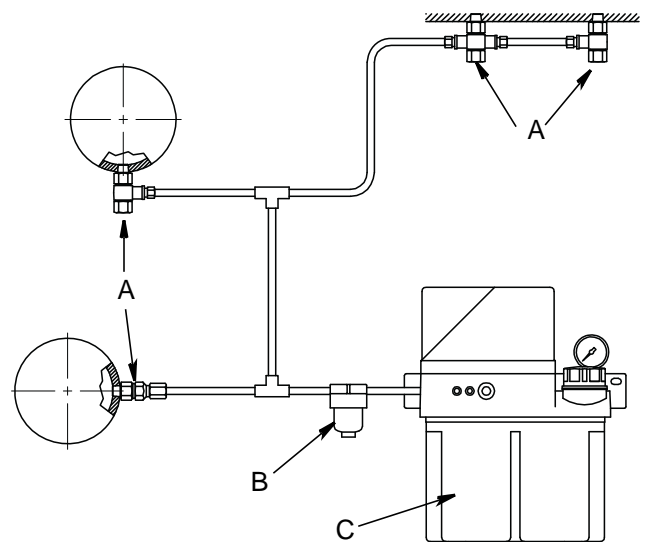


FIG. 2

- A Doser
- B Pressure Filter
- C Lubrication Unit

Assembly Options

Insert into the previously machined housing.

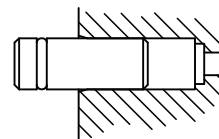


FIG. 3

Nipple Installation Instructions

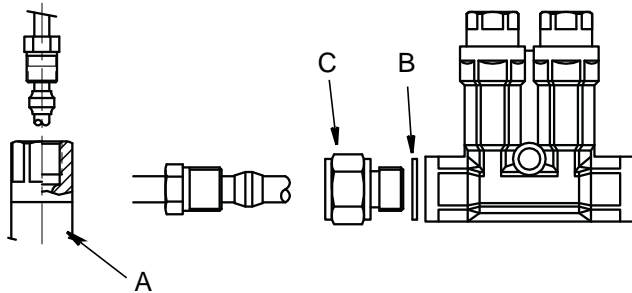


FIG. 4

- A M8x1 connection for fitting + sleeve
- B Copper Washer
- C M10 x 1 or M12 x 1 straight fitting for dosers

1. (If adding nipple to casting with red or white plug, or replacing an existing nipple) **Relieve pressure**, page 7.
2. Carefully remove cap.

NOTE: Due to spring located under cap, cap will be under pressure.

3. Thread nipple into fitting. Torque to 13 to 17.7 in-lbs (1.46 to 1.99 N.m).

NOTE: For a #1 nipple only, piston must also be removed. Then install piston from #1 nipple followed by nipple. Torque to specification in step 3.

Technical Data

Oil

Lubricant	Synthetic and mineral oils
Working pressure	145 to 652 psi (10 to 45 bar, 1.0 to 4.5 MPa)
Pressure relief	< 21.7 psi (1.5 bar, 0.15 MPa)
Working temperature	32° to 158°F (0° to 70°C)
Gasket material	FPM
Viscosity	1.25 to 78.3 inches ² /sec (32 to 2000 mm ² /sec)

Grease

Lubricant	Synthetic and mineral oils; fluid grease NLGI 00-000
Working pressure	145 to 652 psi (10 to 45 bar, 1.0 to 4.5 MPa)
Pressure relief	< 21.7 psi (1.5 bar, 0.15 MPa)
Working temperature	32° to 158°F (0° to 70°C)
Gasket material	FPM

Piston Distributor Mounted Directly to Greasing Point - Oil

Lubricant	Synthetic and mineral oils
Working pressure	261 to 725 psi (18 to 50 bar, 1.8 to 5.0 MPa)
Pressure relief	< 43.5 psi (3 bar, 0.3 MPa)
Working temperature	32° to 158°F (0° to 70°C)
Gasket material	FPM
Viscosity	1.25 to 78.3 inches ² /sec (32 to 2000 mm ² /sec)

Single Point Manifold Dimensions

NOTE: All dimensions are provided in Metric (mm) only.

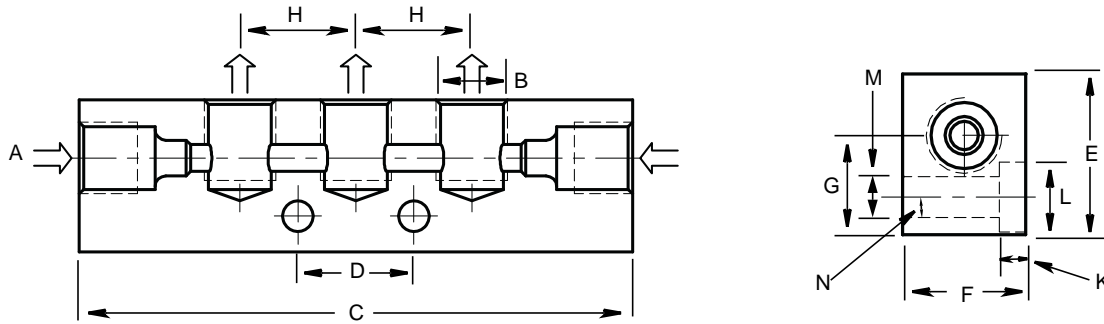


FIG. 5

Thread	Pipe A	Outlets B	C	D	E	F	G	H	K	L	M	N	Material
M10 x 1	6	8	130	52	17	13	10'5	13	2.8	7.4	4'3	4	Aluminum
		10	156	78									
M14 x 1'5	8	6	113	39	20	18	11	13	2.8	7.4	4'3	4	Aluminum
		8	139	65									
M10 x 1	6	6	126	68	20	18	11	17	2.8	7.4	4'3	4	Aluminum

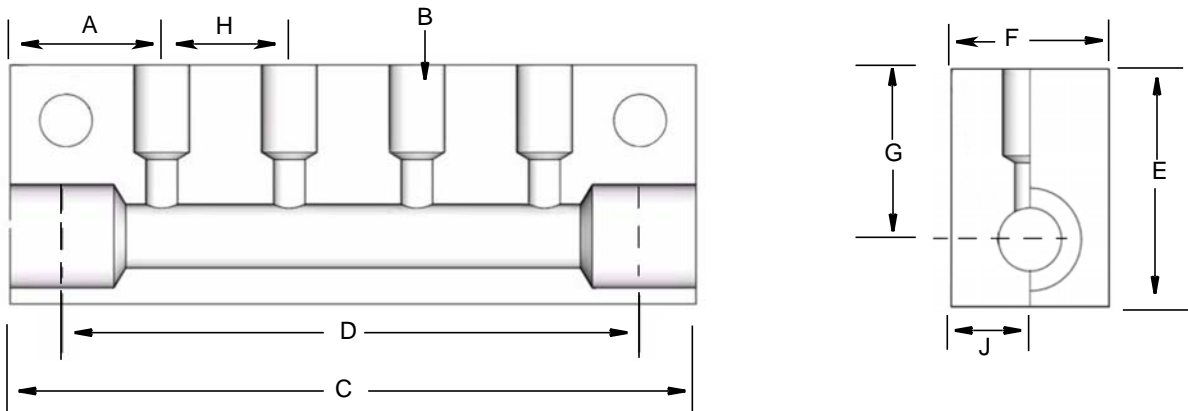


FIG. 6

Part No.	Thread	A	Outlets B	C	D	E	F	G	H	J
15X624	M8 X 1	20	1	40	28	25.4	15	18		7.5
15X625	M10 X 1	20	1	40	28	25.4	15	18		7.5
15X626	M14 X 1.5	24.5	1	49	37	30	20	21		10
15X667	M10 / M8	18	2	52	40	25.4	15	18	16	7.5
15X668	M10 / M8	18	3	68	56	25.4	15	18	16	7.5
15X669	M10 / M8	18	4	84	72	25.4	15	18	16	7.5
15X670	M10 / M8	18	5	100	88	25.4	15	18	16	7.5

Technical Data

Part No.	Thread	A	Outlets B	C	D	E	F	G	H	J
15X671	M10 / M8	18	6	116	104	25.4	15	18	16	7.5
15X672	M10 / M8	18	7	132	120	25.4	15	18	16	7.5
15X673	M10 / M8	18	8	148	136	25.4	15	18	16	7.5
15X674	M10 / M8	18	10	180	168	25.4	15	18	16	7.5
15X675	M10 / M10	18	2	54	42	25.4	15	18	18	7.5
15X676	M10 / M10	18	3	72	60	25.4	15	18	18	7.5
15X677	M10 / M10	18	4	90	78	25.4	15	18	18	7.5
15X678	M10 / M10	18	5	108	96	25.4	15	18	18	7.5
15X679	M10 / M10	18	6	126	114	25.4	15	18	18	7.5
15X680	M10 / M10	18	7	144	132	25.4	15	18	18	7.5
15X681	M10 / M10	18	8	162	150	25.4	15	18	18	7.5
15X682	M10 / M10	18	10	198	186	25.4	15	18	18	7.5
15X683	M14 / M8	19	2	54	40	30	20	21.5	16	10
15X684	M14 / M8	19	3	70	56	30	20	21.5	16	10
15X685	M14 / M8	19	4	86	72	30	20	21.5	16	10
15X686	M14 / M8	19	5	102	88	30	20	21.5	16	10
15X687	M14 / M8	19	6	118	104	30	20	21.5	16	10
15X688	M14 / M8	19	7	134	120	30	20	21.5	16	10
15X689	M14 / M8	19	8	150	136	30	20	21.5	16	10
15X690	M14 / M8	19	10	182	168	30	20	21.5	16	10
15X691	M14 / M10	19	2	56	42	30	20	21.5	18	10
15X692	M14 / M10	19	3	74	60	30	20	21.5	18	10
15X693	M14 / M10	19	4	92	78	30	20	21.5	18	10
15X694	M14 / M10	19	5	110	96	30	20	21.5	18	10
15X695	M14 / M10	19	6	128	114	30	20	21.5	18	10
15X696	M14 / M10	19	7	146	132	30	20	21.5	18	10
15X697	M14 / M10	19	8	164	150	30	20	21.5	18	10
15X698	M14 / M10	19	10	200	186	30	20	21.5	18	10
15X699	M14 / M14	24.5	2	74	60	30	20	21.5	25	10
15X700	M14 / M14	24.5	3	99	85	30	20	21.5	25	10
15X701	M14 / M14	24.5	4	124	110	30	20	21.5	25	10
15X702	M14 / M14	24.5	5	149	135	30	20	21.5	25	10
15X703	M14 / M14	24.5	6	174	160	30	20	21.5	25	10
15X704	M14 / M14	24.5	7	199	185	30	20	21.5	25	10
15X705	M14 / M14	24.5	8	224	210	30	20	21.5	25	10
15X706	M14 / M14	24.5	10	274	260	30	20	21.5	25	10

Dimensions

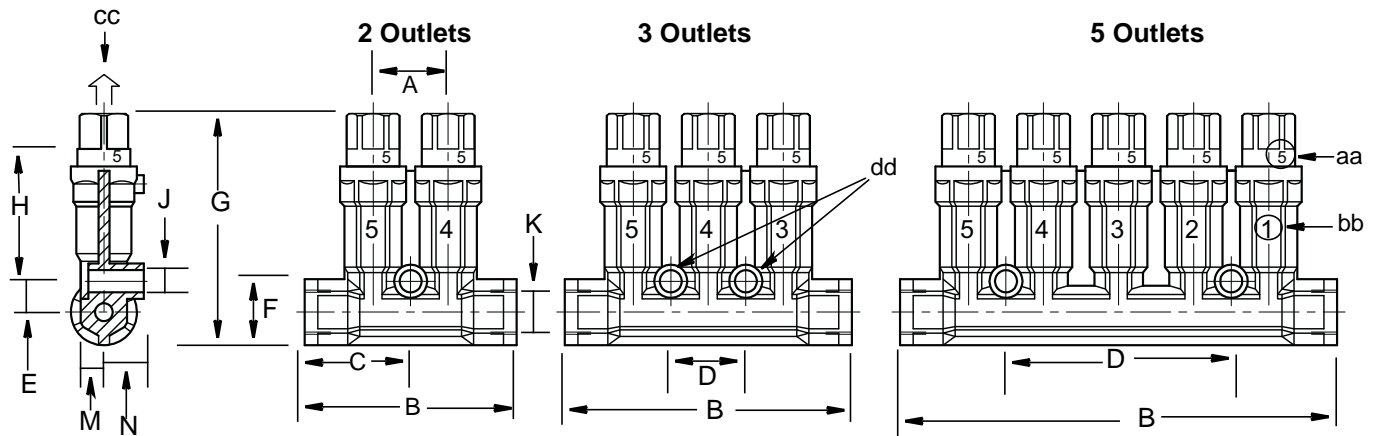


FIG. 7

Model 3500/3510 Mounting Hole Locations (see note with dd).

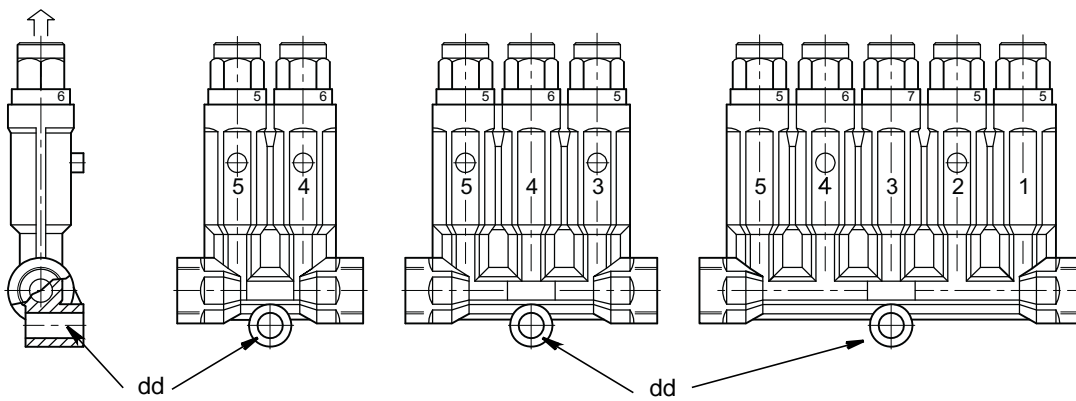


FIG. 8

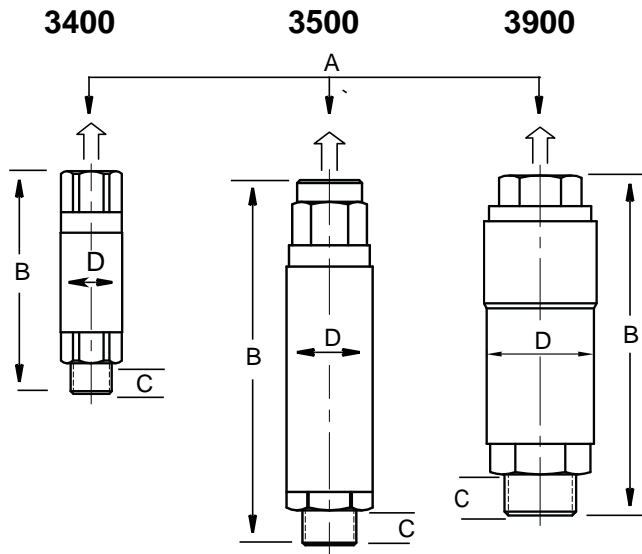
- aa Flow Index
- bb Outlet Number
- cc Pipe = $\varnothing 4$
- dd Mounting Hole Location: NOTE: 3400, 3410, 3900 and 3910 Models. For Model 3500 and 3510 mounting hole locations see FIG. 8,.

Dimensions (All models)*

Ref.	3400 / 3410			3500 / 3510			3900 / 3910	
	2	3	5	2	3	5	2	3
A	.67 in. (17 mm)	.67 in. (17 mm)	.67 in. (17 mm)	.67 in. (17 mm)	.67 in. (17 mm)	.67 in. (17 mm)	.82 in. (21 mm)	.82 in. (21 mm)
B	1.9 in. (48 mm)	2.55 in. (65 mm)	3.9 in. (99 mm)	1.81 in. (46 mm)	2.48 in. (63 mm)	3.8 in. (97 mm)	1.96 in. (50 mm)	2.8 in. (71 mm)
C	.94 in. (24 mm)	.94 in. (24 mm)	.94 in. (24 mm)	.90 in. (23 mm)	1.24 in. (31.5 mm)	1.9 in. (48.5 mm)	.98 in. (25 mm)	.98 in. (25 mm)
D		.67 in. (17 mm)	2 in. (51 mm)					.82 in. (21 mm)
E	.27 in. (7 mm)	.27 in. (7 mm)	.27 in. (7 mm)	.35 in. (9 mm)	.35 in. (9 mm)	.35 in. (9 mm)	.35 in. (9 mm)	.35 in. (9 mm)
F	.59 in. (15 mm)	.59 in. (15 mm)	.59 in. (15 mm)	.67 in. (17 mm)	.67 in. (17 mm)	.67 in. (17 mm)	.67 in. (17 mm)	.67 in. (17 mm)
G	2.05 in. (52 mm)	2.05 in. (52 mm)	2.05 in. (52 mm)	3.09 in. (78.5 mm)	3.09 in. (78.5 mm)	3.09 in. (78.5 mm)	3.1 in. (76.5 mm)	3.1 in. (76.5 mm)
H	1.02 in. (26 mm)	1.02 in. (26 mm)	1.02 in. (26 mm)	2.52 in. (64 mm)	2.52 in. (64 mm)	2.52 in. (64 mm)	2.32 in. (59 mm)	2.32 in. (59 mm)
J	5 mm	5 mm	5 mm	6.5 mm	6.5 mm	6.5 mm	11 mm	11 mm
K	M10 x 1	M10 x 1	M10 x 1	M12 x 1	M12 x 1	M12 x 1	M12 x 1	M12 x 1
M	.11 in. (3 mm)	.11 in. (3 mm)	.11 in. (3 mm)	.43 in. (11 mm)	.43 in. (11 mm)	.43 in. (11 mm)	.47 in. (12 mm)	.47 in. (12 mm)
N	.35 in. (9 mm)	.35 in. (9 mm)	.35 in. (9 mm)	.59 in. (15 mm)	.59 in. (15 mm)	.59 in. (15 mm)	.63 in. (16 mm)	.63 in. (16 mm)

* Casting dimensions are the same for both oil and grease manifolds. However the nipple height is taller for grease.

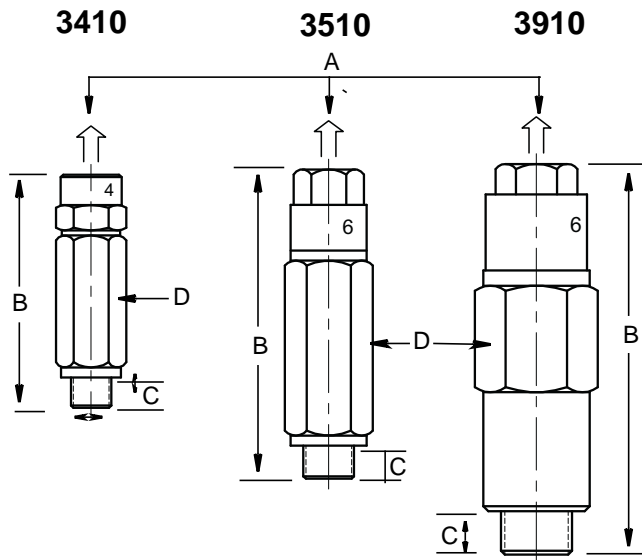
Single Point Oil



REF	Description	3400	3500	3900
A	Outlet Pipe Connection	4 mm	4mm	4mm
B	Height	1.7 in. (43.5 mm).	2.7 in. (67.5 mm)	2.6 in. (66.5 mm)
C	Connection depth	.236 in. (6 mm)	.256 in. (6.5 mm)	.315 in. (8 mm)
D	Width	.472 in. (12 mm)	.630 in. (16 mm)	.827 in. (21 mm)

FIG. 9

Single Point Grease (NLGI 00-000)



Ref	Description	Models		
		3410	3510	3910
A	Outlet Pipe Connection	4 mm	4 mm	4 mm
B	Height	1.81 in. (46 mm)	2.402 in. (61 mm)	3.032 in. (77 mm)
C	Connection depth	.236 in. (6 mm)	.256 in. (6.5 mm)	.335 in. (8.5 mm)
D	Width	.472 in. (12 mm)	.590 in. (15 mm)	.827 in. (21 mm)

FIG. 10

Piston Distributors

Type F

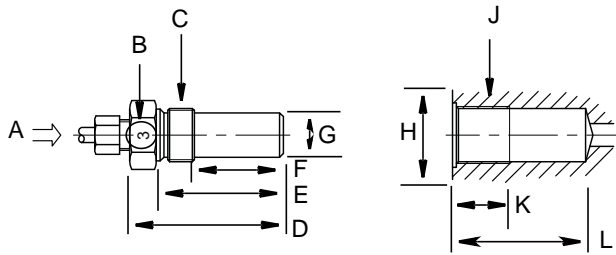


FIG. 11

- A 10
- B Flow Index
- C M14 x 1.5
- D 40.6
- E 32.5
- F 23.5
- G $\varnothing 11.7$

Housing

- H 17
- J M14 x 1.5
- K 15
- L 35

Type GC

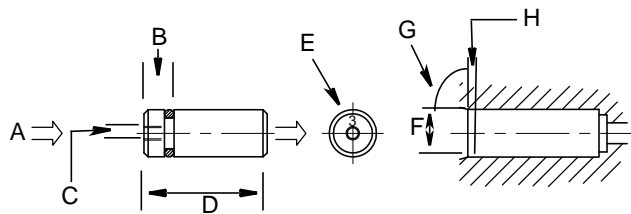


FIG. 12

- A 13.5
- B 10
- C M3
- D 50
- E Flow Index

Housing

- F 13.5
- G 15° Angle
- H 1

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