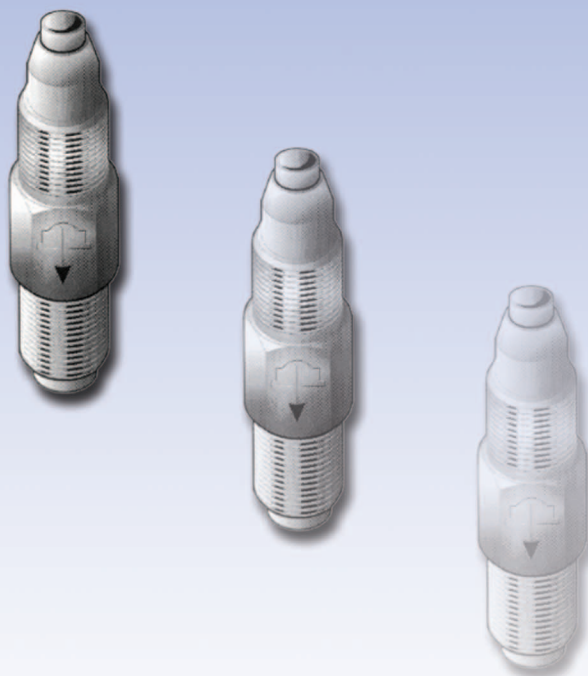


SINGLE LINE

SYSTEM 01



CATALOGUE 01



Centralised lubrication systems
www.dropsa.com

WK 24/07
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TABLE OF VISCOSITIES

Centl stokes	Red-wood No.1	Say-bolt SUS*	Engler	Centl stokes	Red-wood No.1	Say-bolt SUS*	Engler	Centl stokes	Red-wood No.1	Say-bolt SUS*	Engler
2.0	30.76	32.64	1.119	23.0	96.96	110.40	3.215	140.0	570.10	647.90	18.43
2.1	31.01	33.00	1.129	24.0	100.80	114.70	3.335	145.0	590.40	671.10	19.08
2.2	31.26	33.36	1.139	25.0	104.60	119.00	3.455	150.0	610.70	694.20	19.75
2.3	31.51	33.72	1.149	26.0	108.50	123.40	3.575	155.0	631.00	717.20	20.40
2.4	31.76	34.08	1.159	27.0	112.40	127.80	3.695	160.0	651.40	740.40	21.05
2.5	32.01	34.44	1.169	28.0	116.30	132.30	3.820	165.0	671.80	763.40	21.72
2.6	32.26	34.76	1.178	29.0	120.20	136.70	3.945	170.0	692.40	786.60	22.38
2.7	32.51	35.08	1.188	30.0	124.20	141.10	4.070	175.0	712.60	809.70	23.03
2.8	32.76	35.41	1.198	31.0	128.10	145.50	4.195	180.0	733.10	932.90	23.70
2.9	33.01	35.73	1.207	32.0	132.10	149.90	4.320	185.0	753.50	856.10	24.35
3.0	33.26	36.05	1.217	33.0	136.10	154.40	4.445	190.0	774.00	879.30	25.00
3.1	33.51	36.37	1.226	34.0	140.0	158.90	4.570	195.0	794.30	902.50	25.67
3.2	33.76	36.69	1.235	35.0	144.0	163.40	4.695	200.0	814.60	925.60	26.32
3.3	34.01	37.01	1.244	36.0	147.90	167.90	4.825	210.0	855.20	971.80	27.65
3.4	34.27	37.33	1.253	37.0	151.90	172.40	4.955	220.0	896.30	1018.00	28.95
3.5	34.52	37.65	1.262	38.0	155.90	176.90	5.080	230.0	936.90	1065.00	30.28
3.6	34.77	37.95	1.274	39.0	160.00	181.40	5.205	240.0	978.00	1111.00	31.60
3.7	35.03	38.25	1.283	40.0	164.00	185.90	5.335	250.0	1018.00	1157.00	32.90
3.8	35.28	38.55	1.291	41.0	168.00	190.50	5.465	260.0	1059.00	1203.00	34.25
3.9	35.53	38.85	1.300	42.0	172.00	195.00	5.590	270.0	1099.00	1249.00	35.55
4.0	35.78	39.15	1.308	43.0	176.10	199.50	5.720	280.0	1140.00	1296.00	36.85
4.5	37.03	40.76	1.350	44.0	180.10	204.10	5.845	290.0	1181.00	1342.00	38.18
5.0	38.31	42.36	1.400	45.0	184.20	208.70	5.975	300.0	1222.00	1388.00	39.50
5.5	39.65	43.96	1.441	46.0	188.20	213.30	6.105	310.0	1263.00	1434.00	40.80
6.0	40.91	45.57	1.481	47.0	192.20	217.90	6.235	320.0	1303.00	1480.00	42.12
6.5	42.26	47.17	1.521	48.0	196.30	222.50	6.365	330.0	1344.00	1527.00	43.45
7.0	43.57	48.77	1.563	49.0	200.30	227.10	6.495	340.0	1385.00	1574.00	44.75
7.5	44.89	50.42	1.605	50.0	204.30	231.70	6.630	350.0	1425.00	1620.00	46.10
8.0	46.26	52.07	1.653	55.0	224.60	254.80	7.238	360.0	1465.00	1666.00	47.40
8.5	47.66	53.77	1.700	60.0	244.80	277.80	7.896	370.0	1505.00	1712.00	48.70
9.0	49.04	55.48	1.746	65.0	265.20	300.80	8.554	380.0	1546.00	1759.00	50.00
9.5	50.47	57.18	1.791	70.0	285.50	323.80	9.212	390.0	1587.00	1805.00	51.35
10.0	51.92	58.88	1.837	75.0	305.70	347.00	9.870	400.0	1628.00	1851.00	52.65
11.0	54.94	62.39	1.928	80.0	326.00	370.20	10.530	450.0	1832.00	2082.00	59.25
12.0	58.05	66.00	2.020	85.0	346.30	393.30	11.190	500.0	2036.00	2314.00	65.80
13.0	61.24	69.70	2.120	90.0	366.60	416.50	11.850	550.0	2239.00	2545.00	72.40
14.0	64.50	73.50	2.219	95.0	386.80	439.50	12.510	600.0	2443.00	2777.00	79.00
15.0	67.89	77.31	2.323	100.0	407.30	462.60	13.160	650.0	2646.00	3008.00	85.60
16.0	71.34	81.21	2.434	105.0	427.70	485.80	13.820	700.0	2850.00	3239.00	92.20
17.0	74.80	85.22	2.540	110.0	447.90	509.00	14.470	750.0	3054.00	3471.00	98.80
18.0	78.36	89.32	2.644	115.0	468.20	532.10	15.140	800.0	3258.00	3702.00	105.30
19.0	82.00	93.43	2.755	120.0	488.60	555.30	15.800	850.0	3462.00	3934.00	111.90
20.0	85.66	97.64	2.870	125.0	509.00	578.50	16.450	900.0	3666.00	4165.00	118.50
21.0	89.42	101.80	2.984	130.0	529.30	601.60	17.110	950.0	3871.00	4396.00	125.00
22.0	93.16	106.10	3.100	135.0	549.60	624.70	17.760	1000.0	4074.00	4628.00	131.60

*SUS = Saybolt Universal 100°F

INTRODUCTION

The 01 Single Line System operates by distributing the output of a pump over a number of Meter Units.

This system provides a simple and very cost effective method of oil lubrication on small machine applications such as: Wood-working machines; shoe making machines; small machine tools and printing machines

A typical system comprises of:

PUMP

The pump is used to develop pressure and feed the lubricant in the distribution line and can be Manual, Electric, Pneumatic or Hydraulic.

METER UNITS

Can be for Intermittent or Continuous Lubrication. Used to partition the oil between the lubrication points. All Meter Units contain a check valve to prevent back flow. The vast range amply covers all practical requirements.

JUNCTIONS

Meter Units may be fitted either directly to the bearing or grouped in Junctions.

FITTINGS, PLUGS, ADAPTERS AND ACCESSORIES

The primary and secondary lubrication lines may be in Nylon, Copper or Copper-plated tubing having an external diameter of 4 mm. (5/32"). Lubrication points will normally be 1/8" BSP

RELATIVE VALUE

The Relative Value of the pump is important for calculating the number of Single Line Meter Units that the pump can continuously feed for a minimum time of 5 minutes.

The sum of the Relative Values of all the Meter Units used in the system must not exceed the "Relative Value" of the Pump.



01 SYSTEM METER UNITS

PUMPS



Manually operated single stroke pumps (p.6-7)



Elettromagnetic oil pump "piccola" "System 01 version (p.12)



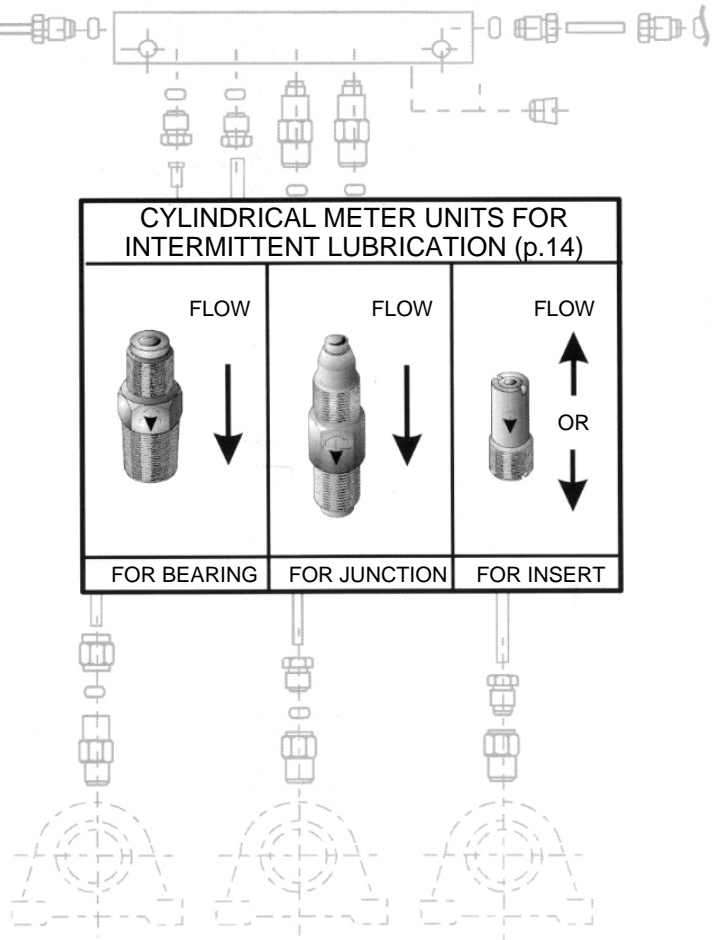
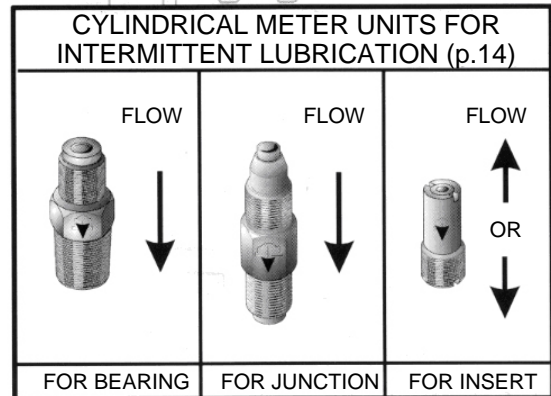
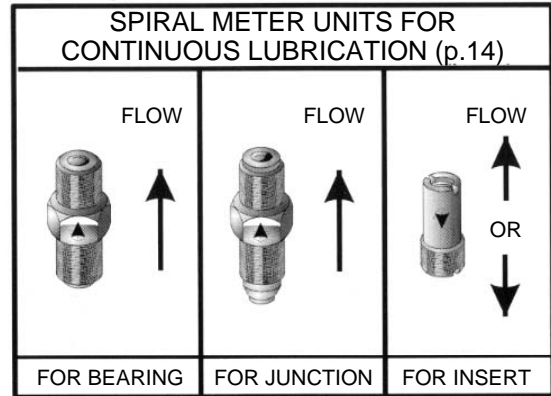
Microelectric piston pump (p.11)



Manual pump "Smile" series (p.8)



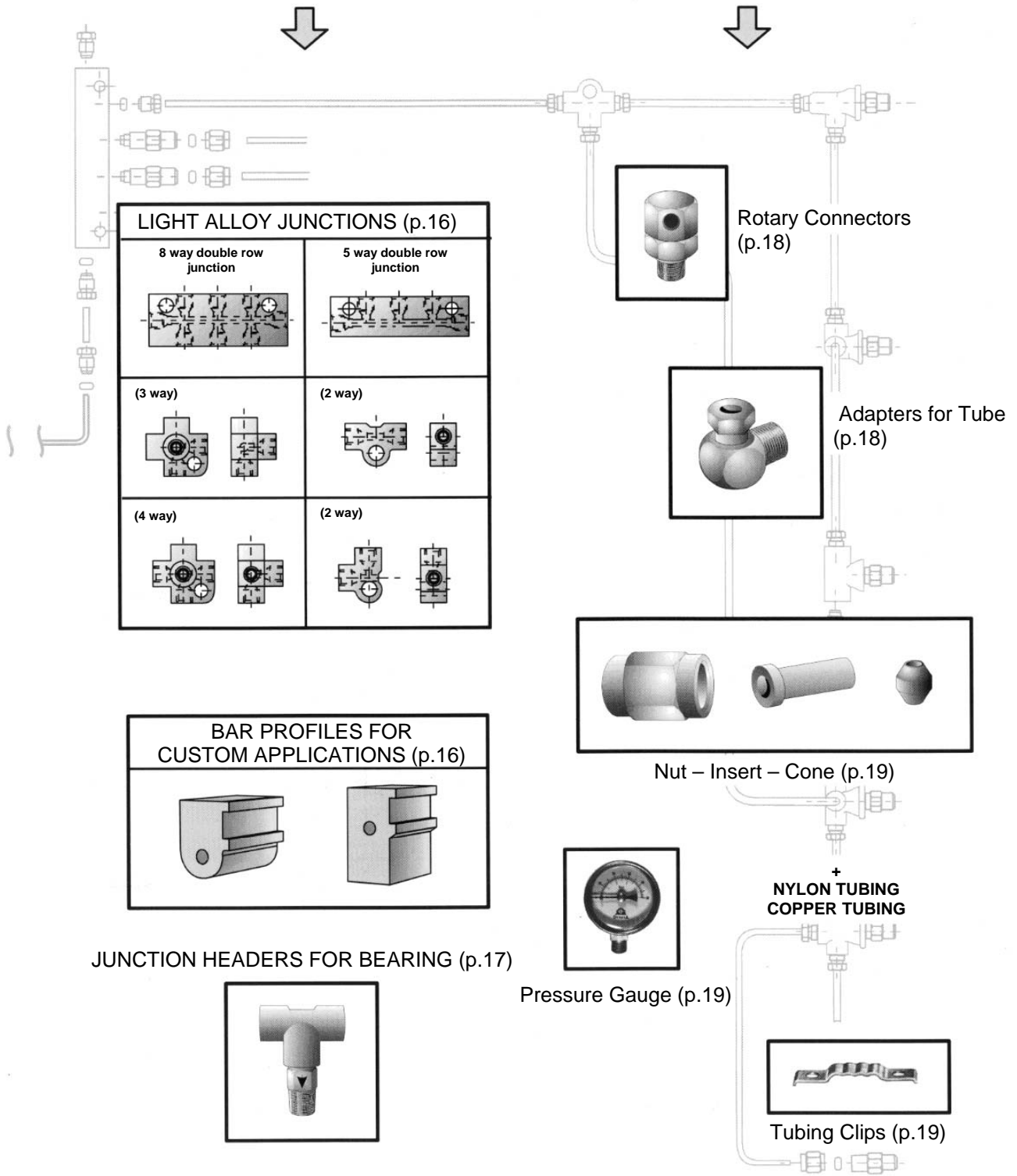
Manually operated single stroke pumps (p.6-7)



DIAGRAM

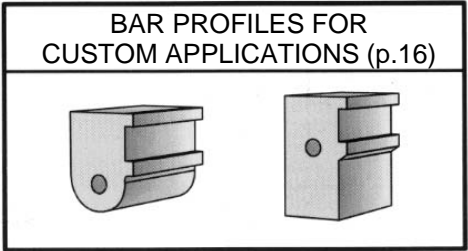
JUNCTIONS

ACCESSORIES



LIGHT ALLOY JUNCTIONS (p.16)

<p>8 way double row junction</p>	<p>5 way double row junction</p>
<p>(3 way)</p>	<p>(2 way)</p>
<p>(4 way)</p>	<p>(2 way)</p>



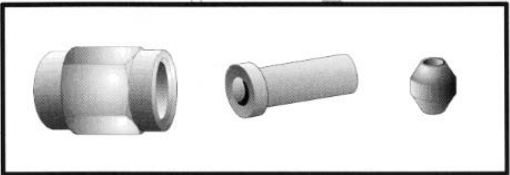
JUNCTION HEADERS FOR BEARING (p.17)



Rotary Connectors (p.18)



Adapters for Tube (p.18)



Nut - Insert - Cone (p.19)



Pressure Gauge (p.19)

NYLON TUBING + COPPER TUBING



Tubing Clips (p.19)

MANUALLY OPERATED "SINGLE STROKE" PUMPS

DESCRIPTION:

This range of manually operated "push or pull type" piston pumps are specifically designed for feeding installations with metering units of the Dropsa Single Line 01 System.

All the pumps have two outlets. The outlets have an integral adjustable control valve on pumps **Part No's 12100, 216035 and 216055**.

Dual outlet ports permit system extension from both sides of the pump.

The pumps can be operated with a single outlet by plugging the outlet not required.

CHARACTERISTICS:

Compatible Fluids: These pumps can handle a wide range of fluids, such as: vegetable oil; mineral oil; silicon oil; ink; glycols and many synthetic oils. Please contact our Technical Office for other applications.

Viscosity range: Min. 15 cSt - Max. 250 cSt (77 - 1150 SUS)

Outlet: 1/8" BSP (An adapter Part No. 3077075 is available for 1/8 NPT)

Pump Part No. 12100 & 12105

Delivery: 15 cm³ per stroke (.9 cu.in.)

Reservoir capacity: 400 cm³ (12.2 cu.in.)

Operating pressure: 3 bar (45 psi)

Pump Part No 216035, 216040, 216055 and 216060

Delivery: 2 cm³ per stroke (.12 cu.in.)

Reservoir capacity: 200 cm³ (12.2 cu.in.)

Operating pressure: 5 bar (75 psi)

INSTALLATION/OPERATION:

Installation:

the mounting location for the pump should be selected to provide access for the refilling of the reservoir, ease of installation, protection from damage and freedom of operation.

After having filled the reservoir with pure mineral oil operate the pump handle several times until a steady lubricant flow appears at the discharge ports.

Note: When operating the pump for the first time, it is advisable to plug the outlets ports during the suction phase to facilitate the priming of the pumping unit.

Maintenance:

Periodically check the suction filter to avoid clogging. The filter should be cleaned at least twice a year. Remove the filter, wash in solvent and replace it into the pump. To remove the filter dismantle the reservoir by turning it in a counter clockwise direction.



RELATIVE VALUE:

Refer to the following tables:

Pump Part No.	Relative value
12100 & 12105	90
216035 216040	12
216055& 216060	12

Metering Units Part No.	Relative value	Number of metering units served	
		Pump relative value 12	Pump relative value 90
00/aa	0,75	16	120
0/a	1	12	90
1/b	2	6	45
2/c	4	3	22
3/d	8	1	11
4/e	16	-	5
5/f	32	-	2

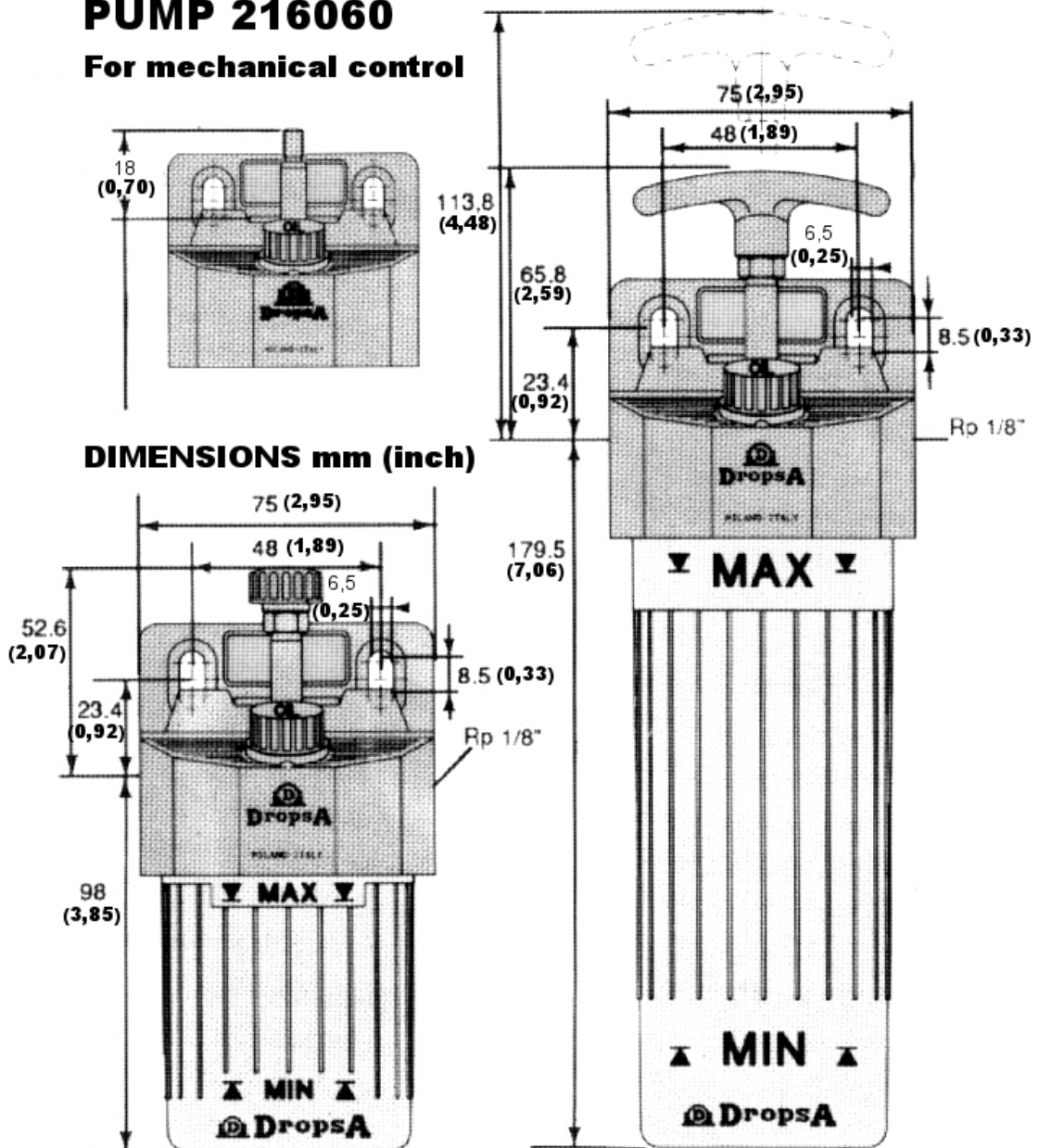
Note: the relative value of the metering units corresponds to the number of drops of lubricant discharged per minute (1 drop = 33 mm³).

MANUALLY OPERATED "SINGLE STROKE" PUMPS

ORDERING INFORMATION:

Part No.	Reservoir cm ³ (cu.in)	Delivery per stroke	Control Valve	Operation
12100	400 (24,40)	15 (0,91)	Yes	pull
12105	400 (24,40)	15 (0,91)	No	pull
216035	200 (12,20)	2 (0,12)	Yes	push
216040	200 (12,20)	2 (0,12)	No	push
216055	200 (12,20)	2 (0,12)	Yes	cam driven
216060	200 (12,20)	2 (0,12)	No	cam driven

PUMP 216060 For mechanical control



MANUAL PUMP SERIES "SMILE"

The SMILE Manual Pump is one of the most effective low-cost entry level manual pumps available offering exceptional quality, compactness and reliability at an unbeatable price.

It can be used as a single point lubrication pump or on an Orifice Metering System to provide oil lubrication on many small machines.

CHARACTERISTICS:

- Discharge per stroke:** 5 cm³ (0.30 cu.in)
- Max pressure:** 3 bar (45 psi)
- Min pressure:** 1 bar (14 psi)
- Type of lubricant:** oil 220 cSt Max. at the working temperature
- Reservoir capacity:** 500 cm³ (30,5 cu.in) - 1000 cm³ (61 cu.in) - 3000 cm³ (183 cu.in) constructed in a lubricant compatible transparent plastic

INSTALLATION/OPERATION:

Installation:

Provide adequate space for the installation, leaving a minimum room of 100 mm (3.93 in.) around the pump. Mount the SMILE manual pump at shoulder height to avoid unnatural posture or the possibility of sustaining impacts. Do not install the SMILE pump in particularly aggressive or explosive/flammable environments or on components subject to vibration. Only use the supplied mounting bracket with N° 2 holes for Ø 6 mm (0.2 in.) bolts.

Connect the Outlet Manifold Block threaded 5/16-24 UNF with a tube Ø 4.

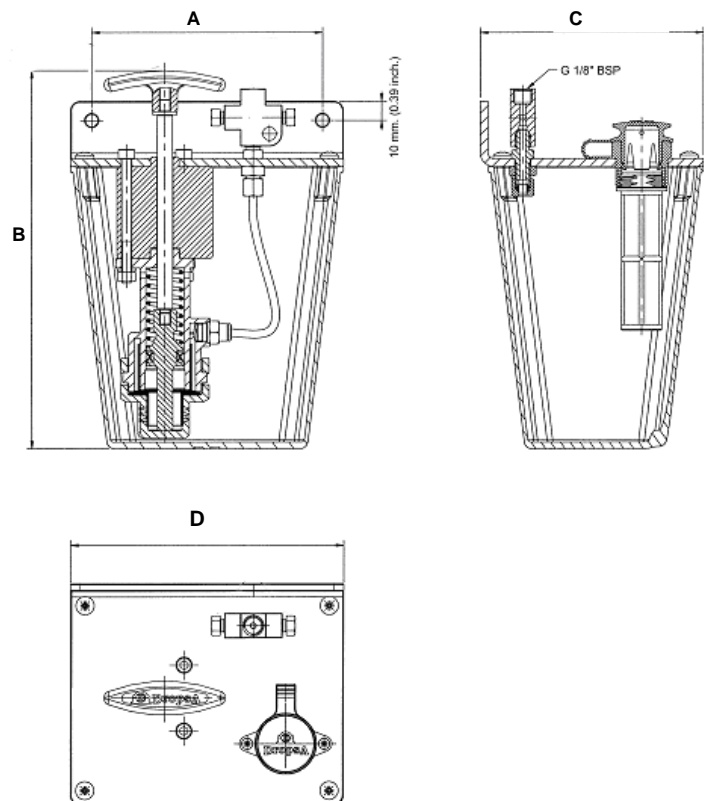
N.B.: After all connections have been completed ensure the tubing and cables are protected from impacts and are suitably secured.

Maintenance:

The pump has been designed and constructed so as to reduce maintenance to a minimum. To simplify maintenance it is recommended that the equipment be mounted in an easily reached location. Periodically check the tubing connections for leaks. Always maintain the equipment in a clean condition in order that any leaks will be immediately evident.

Optional accessories:

Part No.	Description
5717300	Nylon tube Ø 4x3
910102	Push-in 1/8 for tube Ø 4
3084612	Push-in 5/16 for tube Ø 4
20557	Manometer 1/8
3232098	Plug 1/8



Part No.	Dimensions				Weight Kg.	Reservoir Lt.
	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)		
12140	100 (3.93)	150 (5.90)	94 (3.70)	120 (4.72)	0,75	0,5
12150	120 (4.72)	198 (7.79)	116 (4.56)	142 (5.59)	1,40	1
12160	220 (8.66)	200 (7.87)	139 (5.47)	242 (9.52)	2,30	3

MOTORISED PUMPS

Gear pumps with a discharge of 0,5 l/min. (1,05 pints/min.)
 Three-phase motor 220/380 V, 50Hz
 Speed 1500 r.p.m.
 Standard MEC 56

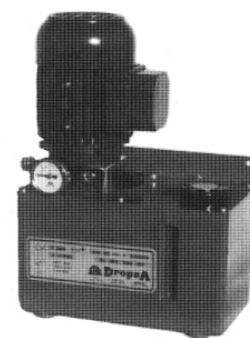
All the versions are equipped with a pressure reducing valve and may be controlled from the electric equipment VIP controller.

CHARACTERISTICS:

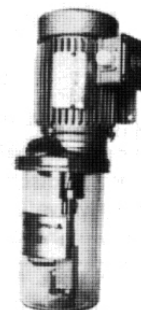
Part No. 3404033

Part No. 3404009-3404010-3404012

Reservoir capacity:	3 Lt. (6.3 pint) 1 Lt. (2.1 pint)
Pressure:	5 bar (73,5 psi) 2 - 5 bar (29,4 - 73,5 psi)
Relative value:	1500 1500
Motor power:	0,09 Kw 0,09 Kw
Electric level indicator:	Yes No
Height:	300 mm (11,8 in.) 365 mm (14,3 in.)
Width:	240 mm (9,4 in.) 110 mm (4,3 in.)
Depth:	134 mm (5,2 in.) 130 mm (5,1 in.)
Weight	
Without reservoir:	4,15 Kg (9,1 lb) Part No 3404009
Transparent reservoir:	4,40 Kg (9,7 lb) Part No 3404010
Metal reservoir:	4,65 Kg (10,2 lb) Part No 3404012 6,1 Kg (13,4 lb) Part No 3404033



Part No. 3404033



Part No. 3404010

PNEUMATICALLY AND HIDRAULICALLY OPERATED PUMPS

A three way electric or mechanical valve is required for the line, cylinder and discharge.

The ratio between the operating pressure and lubricant pressure is 1:1.
 The reservoir is die-cast and is supplied with a sight gauge.

CHARACTERISTICS:

Discharge per stroke	15 cm ³
Operating pressure	from 2 to 8 bar (30-120 psi)
Reservoir capacity	0,8 litre (1,6 pint)
Relative value	85
Dimensions	Height 210 mm. (8.26 in.) Width 117 mm. (4.60 in.) Depth 90 mm. (3.54 in.)
Weight	1,78 kg (3,9 lb.)

The pumps is supplied with a right hand outlet as standard but can be supplied with a left hand outlet if required.



Part No. 3107001

MICROELECTRIC PISTON PUMP

These **3417000** series cyclic pumps feature a cam operated piston. The time cycle is fixed and is determined by the type of gearbox connected to the motor (see table). The delivery is adjustable.

CHARACTERISTICS:

Working pressure: 4 bar (58 psi)

Electric motors:

Single phase, 50/60 cycles. For electrical characteristics see table.

Absorbed power 2.5 Watt – 3.5 VA at 50 cycles; 2 Watt – 2.5 VA at 60 cycles.

Voltage variation +/- 10%

Characteristics of the Electric Level Contact:

Max. power 10 Watt – 12 VA, Max. Voltage 240 V

Type of lubricant: oil 250 cSt Max. at the working temperature.

Minimum Level Switch:

The minimum level switch has a normally open contact in the rest position (oil below the minimum level). If it is desired to have the contact closed in the rest position (oil below the minimum level) reverse the float.

Reservoirs:

1,7 litres (3,5 pint), Material; white semi-transparent Moplen-RO ZB5015, degree E-ASTM D1238

1,1 litres (2,3 pint), Material; sheet steel.



**Part No.
3417036/3417165**

Motor Voltage	Part No. motor	Lubrication interval in minutes		5 cc. pump assy. + 1,1 litre reservoir	5 cc. pump assy. + 1,7 litre reservoir	1 cc. pump assy. + 1,7 litre reservoir	1 cc. pump assy. + 1,1 litre reservoir	5 cc. pump only	1 cc. pump only
		50 Hz.	60 Hz.						
24 V 50-60 Hz.	3301339	5	4.16	3417151	3417047	3417116	3417111	3417061	3417131
	3301340	10	8.30	3417152	3417048	3417117	3417112	3417062	3417132
	3301341	30	25	3417153	3417049	3417118	3417113	3417063	3417133
	3301342	60	50	3417154	3417050	3417119	3417114	3417064	3417134
	3301343	120	100	3417155	3417051	3417120	3417115	3417065	3417135
110 V 50-60 Hz.	3301325	5	4.16	3417156	3417042	3417136	3417106	3417056	3417126
	3301327	10	8.30	3417157	3417043	3417137	3417107	3417057	3417127
	3301329	30	25	3417158	3417044	3417138	3417108	3417058	3417128
	3301331	60	50	3417159	3417045	3417139	3417109	3417059	3417129
	3301333	120	100	3417160	3417048	3417140	3417110	3417060	3417130
220 V 50-60 Hz.	3301326	5	4.16	3417161	3417036	3417141	3417101	3417035	3417121
	3301328	10	8.30	3417162	3417037	3417142	3417102	3417052	3417122
	3301330	30	25	3417163	3417038	3417143	3417103	3417053	3417123
	3301332	60	50	3417164	3417039	3417144	3417104	3417054	3417124
	3301334	120	100	3417165	3417041	3417145	3417105	3417055	3417125

ELETTROMAGNETIC OIL PUMP "PICCOLA" SERIES

The Piccola electromagnetic oil lubrication pump is ideally suited for automatic oil lubrication of machine tool and machining centres in general.

In particular, the pump is primarily designed to operate with the Dropsa 01 Orifice lubrication.

Piccola can be used on a single lubrication point or as part of a Metered Orifice (01) single line systems.

The pump continuously delivers lubricant when it is powered on. Optionally, a timer module can be fitted onto the Power connector that cycles the pump at regular time intervals allowing it to function as standalone unit.



System 01 version

CHARACTERISTICS: System 01

Max pressure:	12 bar (176,4 psi) 13, 5 bar (198,45 psi)
Max output volume:	90 cm ³ (5,5 cu.in/min)
Reservoir size:	1 o 3 lt (transparent)
Max operating time:	2 min max 25% of Pause time
Compatible lubricants:	Mineral Oil 15÷220 CSt a 20° C (68°F)
Working temperature:	- 5°C ÷ +60°C (+23°F ÷ +140°F)
Storage temperature:	- 20°C ÷ +60°C (-4°F ÷ +140°F)
Max Humidity:	90% max
Protection grade:	IP-44
Voltage (Single Phase):	24/110/220V – 50/60 Hz
Power consumption:	90 W
Optional time module (110/220V only):	ON Timer: Settable to 0,5 ÷ 120 sec. STANDBY Timer: Settable to 40 sec ÷ 180 min.
	ON Timer: Settable to 0,5 ÷ 120 sec. STANDBY Timer: Settable to 40 sec ÷ 180 min.

Part No.	System 01 Description
3600300	PICCOLA 24 V CA, 90cc, 12 bar, 1 lt
3600301	PICCOLA 110 V CA, 90cc, 12 bar, 1 lt
3600302	PICCOLA 220 V CA, 90cc, 12 bar, 1 lt
3600303	PICCOLA 24 V CA, 90cc, 12 bar, 3 lt
3600304	PICCOLA 110 V CA, 90cc, 12 bar, 3 lt
3600305	PICCOLA 220 V CA, 90cc, 12 bar, 3 lt

INSTALLATION/OPERATION:

Installation:

Allow sufficient space around the pump for ease of maintenance. Install at a suitable level for refilling the oil reservoir. Do not install in aggressive environments. Fix the pump using the two fixing holes and 6 mm screws.

Maintenance:

The Piccola Electromagnetic pump requires only minimal maintenance. To facilitate maintenance it is suggested that the pump be installed in an easily accessible location. Periodically check that the pump is intact and does not present leaks. As required, or at least once a year, clean or substitute the refilling (**3130101**) and suction filter (**3130071**).

Optional accessories:

Part No.	Description
1524492	Timer kit for 110/230 V AC
5717300	Nylon Tube Ø 4x3
3085113 + 33VIP 4	Reducer + push-in for tube Ø 4
3235125 + 93004	Nut + cone for tube Ø 4
1524510	Release valve assy for 33V system (Only as spare part)
1524500	By pass for setting working pressure

MOTORISED GEAR PUMPS "DRAGON" SERIES

MOTORISED GEAR PUMPS "DRAGON" SERIES FOR LUBRICATION WITH OIL OR NGLI 000 GREASE.

Motorised gear pumps for lubrication systems equipped with meter units or control units and for recirculating lubricant systems – max. operating pressure 290 psi (20 bar).

CHARACTERISTICS:

Delivery: 350 - 500 cm³ (21.3 - 30,5 cu.in)
1500 r.p.m.

Relative value: 350 cm³ (21.3 cu.in) 2000 r.p.m.
500 cm³ (30,5 cu.in) 3000 r.p.m.

Pumpable lubricant: oil with viscosity from 15 to 1000 cSt
or grease grade NLGI 000 at the operating

Operating temperature: from -20°C to + 100°C.

Electric motor:

Standard motor – three phase at 4 poles multivoltage or single phase as specified.

Single phase: 220V – 50/60 Hz 90 Watt
110V – 50/60 Hz 90 Watt

Special three-phase motor:
220/380V – 240/415V – 255/440V
50/60 Hz. 90 Watts

Frame size 56 – protection degree IP 55
Insulation class F – Continuous operation S1
12V and 24V dc motors available on request

Reservoir:

Capacity: 3 or 6 litres (6,3 - 12.6 pint) in Moplen semi-transparent
3 litres (6,3 pint) in Aluminium with level sight glass
6 litres (12.6 pint) in Steel with level sight glass

Suction filter:

filtering grade 260 micron

Low level indicator, magnetic type:

Reversible float with contact normally closed on the minimum level.

Max. commutable power 50W – 50 VA

Max. voltage 220 ac – 150 V dc

Max. current 3A

Reverse and min. lubricant level indicator is available on demand; equipped with floats and two switches: the upper one is used for minimum level signal (reserve) the lower one for the absolute minimum level signal.

Minimum level with inductive sensor (for oil and light grease, for 3 litre reservoir only).

Min. voltage 30 V ac – max. voltage 250 V ac

Min. peak current 15 mA – max. 300 mA

Valve block:

Fitted inside the reservoir, consists of:
by pass valve, easily adjustable from the outside.

Refill valve for system equipped with positive metering valves.



ORDERING INFORMATION: Standard Motor:

Electric motor	Part No.	Delivery c.c./min.	Moplen reservoir capacity
Three-phase 220/380V, 240/415V, 255/440V, 50/60 Hz	3901050	350	3
	3901052		6
	3901054	500	3
	3901056		6

Electric motor	Part No.	Delivery c.c./min.	Moplen reservoir capacity
Single phase 220V 50/60 Hz o 110V 50/60 Hz	3901070	350	3
	3901072		6
	3901074	500	3
	3901076		6

Additional motor variants available on request.

Optional accessories:

Part No.	Description
20566	Pressure gauge 0 ÷ 160 bar
3085230	Revolving terminal
3291028	Pressure switch 0 ÷ 10 bar
3042098	Rubber cover

SPIRAL METER UNITS FOR CONTINUOUS LUBRICATION

For use on high precision mechanisms, or for high speed rotating bearings where it is necessary to maintain a continuous film.

They are available for flow rates of a few mm³/hour up to very high flow rates where recovery and re-cycling the oil is necessary.

They are suitable for use with pure mineral oil with a maximum viscosity of 1500cSt at the working pressure.

Pressure: da 1 a 10 bar (0 - 150 psi)

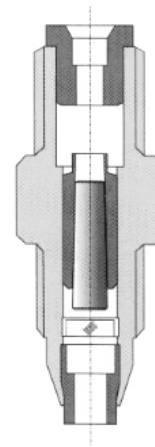
Delivery in c.c. for minute = $\frac{P \times cf}{V}$

P= working pressure in bar

Cf= flow coefficient

V= viscosity in Engler degrees at the working pressure

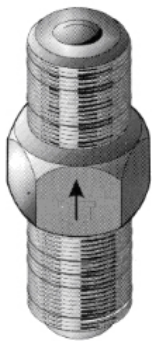
SPIRAL



Type	cf
5/0	0,1224
4/0	0,245
3/0	0,49
00	1,02
0	2,14
1	4,08
2	8,16
3	16,32
4	32,65
5	65,39

The delivery of the pump must not be lower than the sum of the deliveries of the used metering units.

FOR BEARING

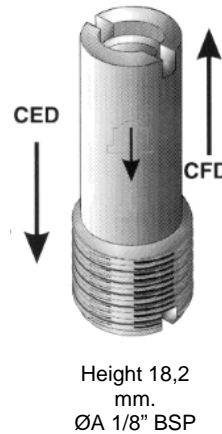


CAD

Type	Part No.
5/0	33220
4/0	33221
3/0	33222
00	33223
0	33224
1	33225
2	33226
3	33227
4	33228
5	33229

Spanner 10 mm. Height 24,2 mm. ØA 1/8" BSP taper ØB 5/16" - 24 NF seating for compression cone tube Ø 4 mm.

FOR INSERT



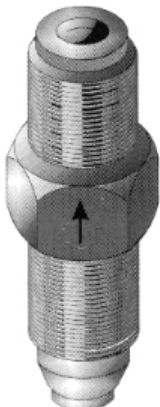
CED

CFD

Type	Part No.	Type	Part No.
5/0	33260	5/0	33270
4/0	33261	4/0	33271
3/0	33262	3/0	33272
00	33263	00	33273
0	33264	0	33274
1	33265	1	33275
2	33266	2	33276
3	33267	3	33277
4	33268	4	33278
5	33269	5	33279

Height 18,2 mm. ØA 1/8" BSP

FOR JUNCTION



CCD

Type	Part No.
5/0	33240
4/0	33241
3/0	33242
00	33243
0	33244
1	33245
2	33246
3	33247
4	33248
5	33249

Spanner 10 mm. Height 30,9 mm. ØA 5/16" - 24 NF ØB 5/16" - 24 NF seating for compression cone tube Ø 2,5 mm.

CBD

Type	Part No.
5/0	33230
4/0	33231
3/0	33232
00	33233
0	33234
1	33235
2	33236
3	33237
4	33238
5	33239

Spanner 10 mm. Height 30,9 mm. ØA 5/16" - 24 NF ØB 5/16" - 24 NF seating for compression cone tube Ø 4 mm.

CDD

Type	Part No.
5/0	33250
4/0	33251
3/0	33252
00	33253
0	33254
1	33255
2	33256
3	33257
4	33258
5	33259

Spanner 8 mm. Height 30,9 mm. ØA 5/16" - 24 NF ØB 1/4" - 28 NF seating for compression cone tube Ø 2,5 mm.

CYLINDRICAL METER UNITS FOR INTERMITTENT LUBRICATION

For use on mechanisms that work intermittently, or are lightly loaded. The sum of the relative values of all the meter units used in the plant must not exceed the relative value indicated for the selected pump.

Suitable for use with pure mineral oil with a maximum viscosity of 1000 cSt at 40°C.

Pressure: from 1 to 10 bar (0 - 150 psi)

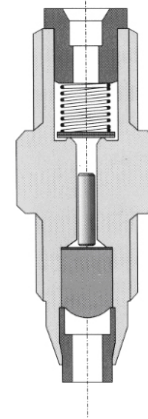
For each meter units the type and calibration is indicated by initials and by a letter, or by a number according to the relative value (000/aaa = 0.50; 00/aa = 0,75; 0/a = 1; 1/b = 2; 2/c = 4; 3/d = 8; 4/e = 16; 5/f = 32).

The relative value corresponds to the number of drops delivered per minute (drop = 33 mm³).

The pump must be chosen with a relative value being not equal to or higher than the sum of valves of the metering units used.

In this way the metering units will feed for 5 minutes and this lapse of time will ensure a uniform pressure in the installation, which ensure that the lubricant flows to all points.

CYLINDRICAL



FOR BEARING

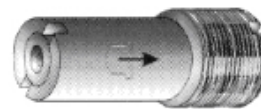


D O

Type	Part No.
aa 00	31200
a 0	31201
b 1	31202
c 2	31203
d 3	31204
e 4	31205
f 5	31206

Spanner 10 mm. Height 27,5 mm. ØA 1/8" BSP taper ØB 5/16" – 24 NF seating for compression cone tube Ø 4 mm.

FOR INSERT



D 15

Type	Part No.
aa 00	35801
a 0	35802
b 1	35803
c 2	35804
d 3	35805
e 4	35806
f 5	35807

Height 26,5 mm. ØA 1/8" BSP Weight 9 gr.

FOR JUNCTION



D 21

Type	Part No.
aaa 000	31399
aa 00	31400
a 0	31401
b 1	31402
c 2	31403
d 3	31404
e 4	31405
f 5	31406

Spanner 10 mm. Height 31,5 mm. ØA 5/16" – 24 NF ØB 5/16" – 24 NF seating for compression cone tube Ø 4 mm.

DDJ

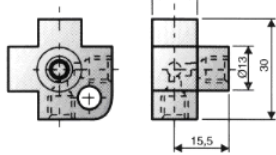
Type	Part No.
aa 00	31301
a 0	31302
b 1	31303
c 2	31304
d 3	31305
e 4	31306
f 5	31307

Spanner 8 mm. Height 28,7 mm. ØA 5/16" – 24 NF ØB 1/4" – 28 seating for compression cone tube Ø 2,5 mm.

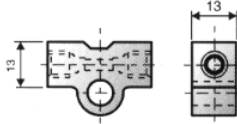
LIGHT ALLOY JUNCTIONS

This junction are produced from extruded from light alloy sections and have two fixing holes. All holes are interconnected and threaded 5/16" – 24 NF with a 54° seating to suit compression cone **Part No. 93004** and bushing **Part No. 92009** (hex.8) or **92004** (hex.9). Suitable only for 4 mm (5/32") tubing.
 Junction meter units type D21 and DDJ may be screwed directly in the junction.
 Junction of different length and fixing centres can be supplied to special order.

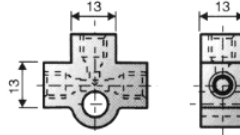
Part No. 30001
(3 way)



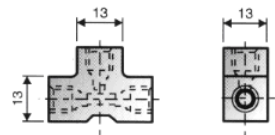
Part No. 42133
(3 way)



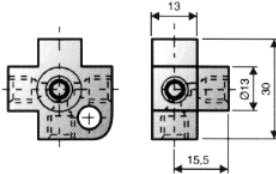
Part No. 42135
(3 way)



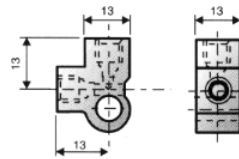
Part No. 42137
(3 way)



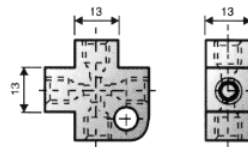
Part No. 40001
(4 way)



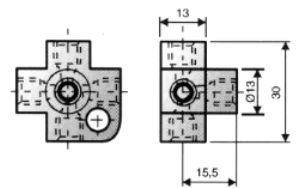
Part No. 42134
(2 way)



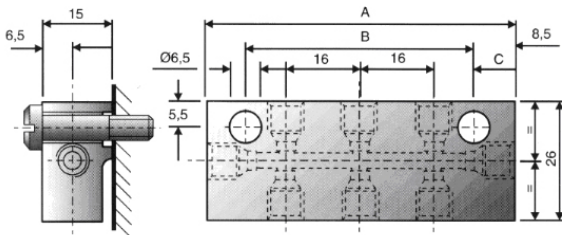
Part No. 42136
(4 way)



Part No. 42142
(5 way)

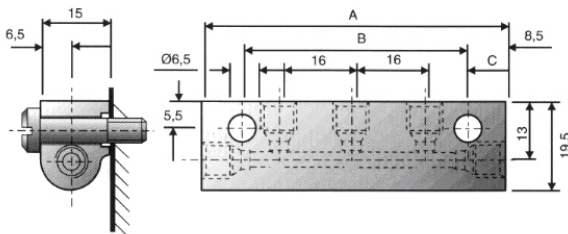


Part No. 42426 8 way double row junction



Outlets	A (mm)	B (mm)	C (mm)	Weight kg	Part No.
6	50,3	33,3	8,65	0,038	42425
8	66,2	49,2	8,60	0,050	42426
10	82	65	8,50	0,062	42427
14	116	99	9,5	0,090	42428

Part No. 42126 5 way double row junction

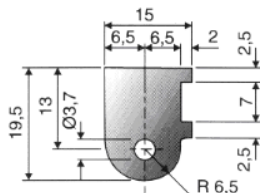


Outlets	A (mm)	B (mm)	C (mm)	Weight kg	Part No.
4	50,3	33,3	8,65	0,028	42125
5	66,2	49,2	8,60	0,037	42126
6	82	65	8,50	0,045	42127
7	98	81	8,50	0,054	42128
8	113,8	96,8	8,40	0,064	42129
10	149	132	10	0,085	42130
12	177,2	160,2	8,10	0,098	42131

BAR PROFILE SECTIONS

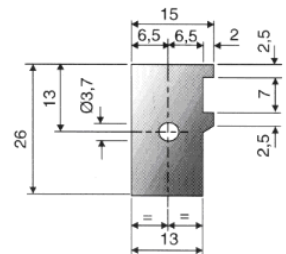
The profile sections from which the junctions are produced may be supplied in bars in commercial lengths from 4 to 6 m.

The bar has a 3,7 mm diameter hole which corresponds to the internal diameter.

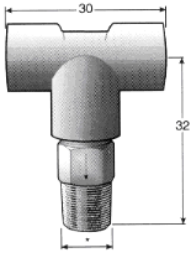


Material in bars
Part No. 5422801
 Weight 0,930 kgs/m.

Material in bars
Part No. 5422800
 Weight 0,650 kgs/m.

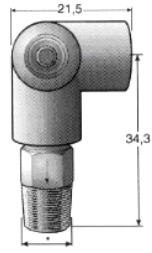


JUNCTION HEADERS WITH METER UNITS FOR BEARING



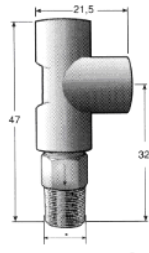
T a 2 vie 180°
CAT

Type	Part No.
5/0	40060
4/0	40061
3/0	40062
00	40063
0	40064
1	40065
2	40066
3	40067
4	40068
5	40069



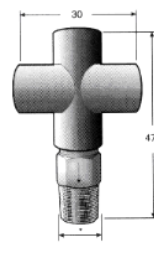
L a 2 vie 90°
CBT

Type	Part No.
5/0	40070
4/0	40071
3/0	40072
00	40073
0	40074
1	40075
2	40076
3	40077
4	40078
5	40079



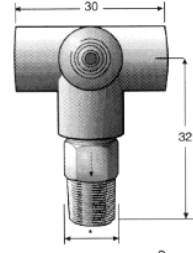
L a 2 vie 90°
CCT

Type	Part No.
5/0	40080
4/0	40081
3/0	40082
00	40083
0	40084
1	40085
2	40086
3	40087
4	40088
5	40089



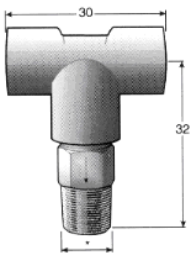
Croce a 3 vie 90°
CDT

Type	Part No.
5/0	40090
4/0	40091
3/0	40092
00	40093
0	40094
1	40095
2	40096
3	40097
4	40098
5	40099



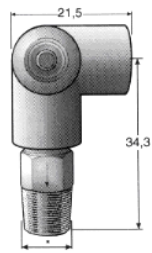
T a 3 vie 90°
CET

Type	Part No.
5/0	40100
4/0	40101
3/0	40102
00	40103
0	40104
1	40105
2	40106
3	40107
4	40108
5	40109



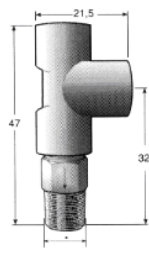
T a 2 vie 180°
D 16

Type	Part No.
aa 00	40540
a 0	40550
b 1	40560
c 2	40570
d 3	40580
e 4	40590
f 5	40600



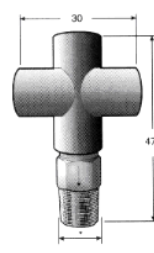
L a 2 vie 90°
D 18

Type	Part No.
aa 00	40440
a 0	40450
b 1	40460
c 2	40470
d 3	40480
e 4	40490
f 5	40500



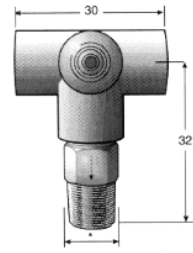
L a 2 vie 90°
D 17

Type	Part No.
aa 00	40290
a 0	40300
b 1	40310
c 2	40320
d 3	40330
e 4	40340
f 5	40350



Croce a 3 vie 90°
D 20

Type	Part No.
aa 00	40140
a 0	40150
b 1	40160
c 2	40170
d 3	40180
e 4	40190
f 5	40200



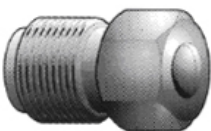
T a 3 vie 90°
D 19

Type	Part No.
aa 00	39990
a 0	40000
b 1	40010
c 2	40020
d 3	40030
e 4	40040
f 5	40050

Note: Junction Headers consist of a Meter Unit and a Junction an are supplied disassembled.

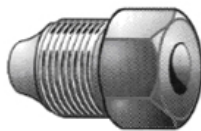
ADAPTERS FOR TUBE Ø 4 mm.

**With seating
for compression fitting**



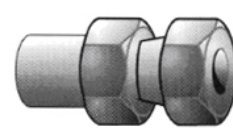
Spanner 8 mm. **Part No. 92009**
Spanner 9 mm. **Part No. 92004**
5/16" – 24 NF threading

Without compression fitting






Spanner 8 mm. **Part No. 94741**
Height 12,5 mm.
5/16" – 24 NF threading

Taper fitting



Spanner 8 mm. **Part No. 95004**
(for holes which cannot be threaded)

ADAPTERS FOR TUBE Ø 4 mm.

										
		Part No.			Part No.			Part No.		
Without compression cone	Taper thread	Span. (mm)	Adapter only	Compl. fitting	Span. (mm)	Adapter only	Compl. fitting	Span. (mm)	Adapter only	Compl. fitting
		1/8" BSP	10	91822	910077	14	92603	914021	12	93243
	1/4" BSP	14	91823	91826	14	92604	914023	14	93245	911048
With compression cone	1/8" BSP	10	910005	92069	10	914005	92686	10	911005	93061
	1/4" BSP	14	92068	92067	-	-	-	14	93060	93059
With check valve	1/8" BSP	12	94370	94373	-	-	-	10	94050	94052
	M8	12	94390	94392	-	-	-	10	94070	94072

ROTARY CONNECTOR

					
Maximum speed 100			Maximum speed 800 90° OUTLET		
Thread	Weight kg.	Part No.	Thread	Weight kg.	Part No.
1/8" BSP taper m.	0,078	1168000	1/8" BSP taper m.	0,130	936500
1/8" BSP taper f.					
1/4" BSP taper m.	0,142	2712000	1/4" BSP taper m.	0,128	936400
1/8" BSP taper f.					
AXIAL OUTLET					
1/4" BSP taper m.			1/4" BSP taper m.	0,130	936350
1/8" BSP taper f.					

ADAPTERS FOR A METER UNIT

Part No. **914024** at 45°



1/8" BSP taper thread

Part No. **911049** at 90°



1/8" BSP taper thread

TUBING

Material	Weight (g/m)	Diameter (mm)		Part No.
		Ext.	Int.	
Copper in coils	50	4	3	5501201
Nylon in coils	6	4	3	5717300

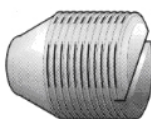
PLUGS

5/16" – 24 NF



Spanner 8 mm. **Part No. 91004**
Spanner 9 mm. **Part No. 91001**
Height 15 mm.

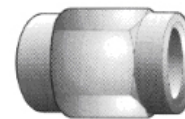
5/16" – 24 NF WITH SCREW-DRIVER SLOT



Height 9 mm. **Part No. 91005**

NUT

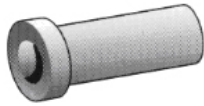
FOR METER UNIT



Threading	Ø Tube (mm.)	Spanner (mm.)	Part No.
1/4"-28 NF	2,5	8	94006
5/16"-24 NF	4	10	94007

INSERT

FOR NYLON TUBING



Ø Tube mm. 4x3
Part No. 3008117

COMPRESSION CONE

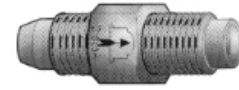
Ø Tube mm. 2,5
Part No. 93002



Ø Tube mm. 4
Part No. 93004

VALVE

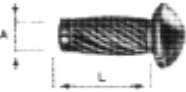
CHECK



5/16"-24 NF threading
Part No. 1111000
Spanner 10 mm

ACCESSORIES

SELF-THREADING RIVETS



Ø Bore (mm.)	Ø A (mm.)	Ø L (mm.)	Part No.
3	3,5	8	18065
3,6	4,2	9,5	18067

SELF-TAPPING SCREWS



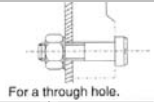
Ø Bore (mm.)	Ø A (mm.)	Ø L (mm.)	Part No.
2,7	M 3	8	14352
3,6	M 4	10	14355
3,6	M 4	18	14356

TUBING CLIPS

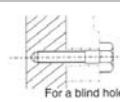


Quantity of tubes	Ø Tube (mm.)	Part No.
With one fixing hole		
1	4	111151
2	4	111152
3	4	111153
With two fixing holes		
4	4	111154
5	4	111155
6	4	111156
8	4	111158

SCREWS TO MOUNT JUNCTIONS



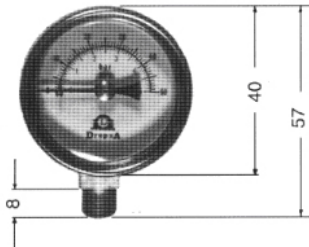
Screw	M 6 x 28	12528
Washer	6,4	16129
Nut	M 6	16404



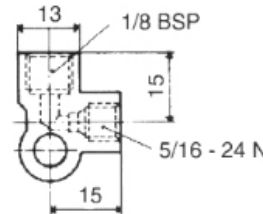
Screw	M 6 x 25	12527
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PRESSURE GAUGE

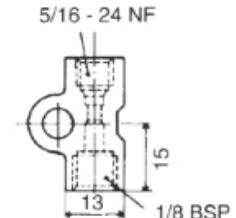
Pressure Gauge connections:



Scale	Part No.
0-6 bar (0-90 psi)	20557
0-16 bar (0-240 psi)	20566



Part No. 42140



Part No. 42139

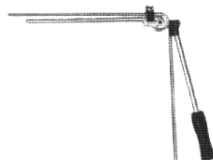
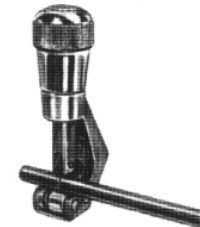
TOOLS

TUBE CUTTER Part No. 2038452

To cut copper and steel tubing.

The knob adjusts the position of the disc, a retractable de-burring device is fitted on the opposite side of the disc the de-burring device itself, rotated through 180°, frees the housing where a spare disc is fitted. Spare wheel **Part No. 2038453**.

N.B. Nylon tubes on the other hand should be cut using a very sharp knife.



TUBE BENDER Part No. 2038468
for Ø 4 mm. tube