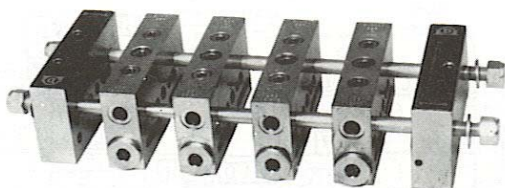


**PROGRESSIVE METERING ELEMENTS WITH STEEL BODY, HARDENED PISTON, HIGH PRESSURE SEALING RING, DEVICE FOR CONNECTING OR SEPARATING THE OUTLETS**



CODES TABLE												
Nut	Washer	Tie rod		Inlet Element			Metering Element			End Elem.		
QUANTITY FOR GROUP												
4	4	2		1			max. 10			1		
Part No.	Part No.	No. of * Elements	Part No.	BSP 3/8	Part No. NPTF 3/8	Metric M 18x1.5	Q		Part No. BSP 1/4	Part No. NPTF 1/4	Metric. M 14x1.5	Part No.
49031	16087	3	640728				.5	.03	644150	643450	645051	640657
		4	640729				1	.06	644151	643451	645052	
		5	640730				1.5	.09	644152	643452	645053	
		6	640731				2	.12	644153	643453	645054	
		7	640732	640655	643096	645001	2.5	.15	644154	643454	645055	
		8	640733				3	.18	644155	643455	645056	
		9	640734				3.5	.21	644156	643456	645057	
		4	640735				4	.24	644157	643457	645058	
		4.5					4.5	.27	644158	643458	645059	
		5					5	.30	644159	643459	645060	

\* No. metering elements in assembled unit.

**TECHNICAL DATA**

Working pressure: max. 400 bar (5700 psi)  
 min. 20 bar (290 psi)  
 Working pressure without check valves (for recirculating systems): min. 12 bar (170 psi)  
 No. cycles per minute: max. 120  
 Driving torque for tie rods: max. 3 kgm (21 lbs.ft)

Use this schedule for prices of assembly units in price list. The assembly unit comprises: inlet element, metering elements, end element, tie rods with nuts and washers.

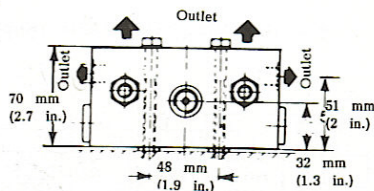
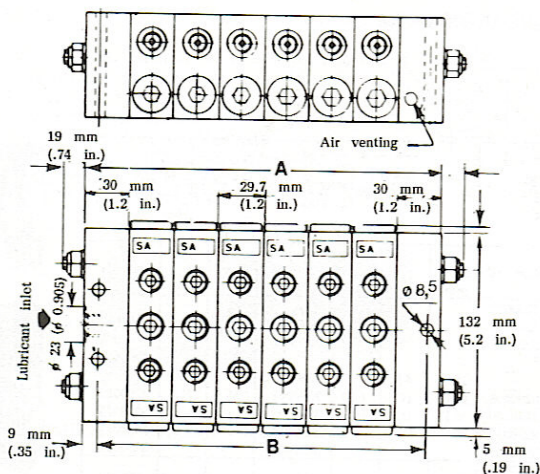
**SPARE PARTS**

Complete set of "O-rings" for:  
 Inlet element - Part No. 640817  
 Metering element - Part No. 640816  
 End element - no sealing rings  
 Inlet element (Viton) - Part No. 640918  
 Metering element (Viton) - Part No. 640919

No. Metering Elements	THREADS		
	BSP Part No.	NPTF Part No.	Metric Part No.
3	640900	643011	645043
4	640901	643011	645044
5	640902	643012	645045
6	640903	643013	645046
7	640904	643014	645047
8	640905	643015	645048
9	640906	643016	645049
10	640907	643017	645050

# SERIAL "SA" METERING ELEMENTS

## OVERALL DIMENSIONS



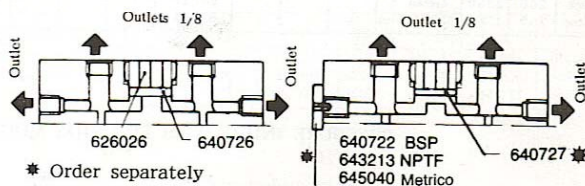
No. Metering Elements	Dimensions			
	mm	A in.	mm	B in.
3	149.1	5.8	131.6	5.1
4	178.8	7.0	161.3	6.3
5	208.5	8.1	191.0	7.5
6	238.2	9.3	220.7	8.6
7	267.9	10.5	250.4	9.8
8	297.6	11.6	280.1	11.0
9	327.3	12.8	309.8	12.1
10	357.0	14.0	339.5	13.2

In order to get a perfect working, ensure that the group has been correctly ported. You can double the delivery by converting from single outlet.

Remove gasket 640727 and replace screw 640726 as shown in the side drawing.

The top outlets are always 1/8" BSP, also for manufacture metric type.

## TO CONNECT OUTLETS



\* Order separately

\* 640722 BSP  
643213 NPTF  
645040 Metric

## CONNECTIONS FOR ELEMENTS

CHARACTERISTICS				FITTING (R)				BRIDGE CONNECTIONS									
				Hex mm	L mm	Pipe seat C mm	Part N°	Hex mm	L mm	H mm	I mm	Part N°	Hex mm	L mm	H mm	I mm	Part N°
Thread	A	B	C														
BSP Silver colour	1/4	1/8	1/4	17	46	8	640479	19	60	22.5	29.7	640039	19	60	34	29.7	640057
Silver colour thread																	
NPTF Black colour	1/4	1/8	1/4	19	45	-	640131	19	60	24.5	29.7	643155	19	60	32	29.7	643160
Black colour thread																	
Metric Yellow colour	M14x1.5	1/8 BSP	M14x1.5	17	49.5	8	640132	19	60	22.5	29.7	645020	19	60	34	29.7	645021
Yellow colour thread																	



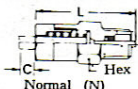
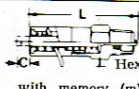
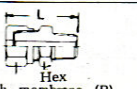
1 mm = .039 inches

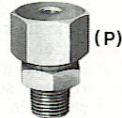
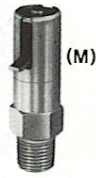


CENTRALIZED LUBRICATION SYSTEMS

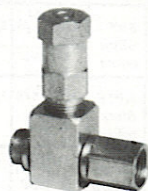
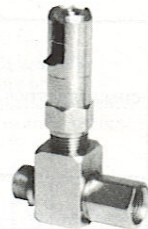
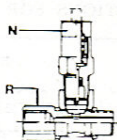
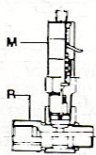


PRESSURE INDICATORS

CHARACTERISTICS			 Normal (N)				 with memory (m)			 with membrane (P)						
Thread	Max. Pressure		Colour of rod or membrane	Hex mm	L mm	C max. mm	Part N <sup>o</sup>	Hex mm	L mm	C max. mm	Part N <sup>o</sup>	Hex mm	L mm	Part N <sup>o</sup>		
	bar	psi														
BSP	20	290	Blue	12	31.5	5	3290019	12	44	5	3290022	14	28.5	3290012		
	30	430	Silver				3290006								3290000	3290012
	50	710	Bronze				3290007								3290001	3290013
	75	1080	Red				—								—	—
	50	710	White				—								—	—
1/8	100	1430	Yellow	(.46 in.)	(1.2 in.)	(.20 in.)	3290008	(.46 in.)	(1.7 in.)	(.20 in.)	3290022	(.55 in.)	(1.1 in.)	3290014		
	150	2140	Black	3290009	3290003	3290015										
Silver colour	200	2850	Green	3290010	3290004	3290016										
	250	3560	Light blue	3290011	3290005	3290017										
	20	290	Blue	850712	850700	850704										
NPTF	30	430	Silver	12	31.5	5	850713	12	44	5	850719	14	28.5	850707		
	50	710	Bronze				850714				850710			850707		
	75	1080	Red				—				—			—		
	50	710	White				—				—			—		
	100	1430	Yellow				(.46 in.)				(1.2 in.)			(.20 in.)	850715	(.46 in.)
1/8	150	2140	Black	850716	850702	850705										
	200	2850	Green	850717	850703	850706										
	250	3560	Light blue	850718	850711	850709										



PRESSURE INDICATORS FOR SIDE MOUNTING



Pressure max.	Part No. BSP thread		Part No. NPTF thread		Part No. Metric thread	
	with memory M • R	normal N • R	with memory M • R	normal N • R	with memory M • R	normal N • R
bar	psi					
20	290	—	—	643345	—	645166
30	430	644021	644032	643338	643346	645167
50	710	644022	644033	643339	643347	645173
75	1080	644023	—	643340	—	645174
100	1430	644024	644034	643341	643348	645175
150	2140	644025	644035	643342	643349	645176
200	2850	644026	644036	643343	643350	645177
250	3560	644027	644037	643344	643351	645178
						645179

# ACCESSORIES FOR "SA" METERING ELEMENTS

## CYCLE CONTROL ELEMENTS

### MOVEMENT MONITORING OF METERING ELEMENT PISTON BY MEANS OF A MICROSWITCH

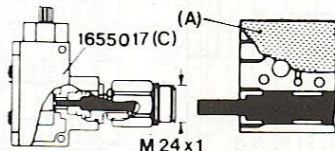
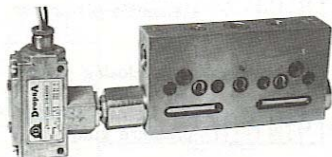
A microswitch with a change over contact is controlled by an extended rod, integral with the metering element piston. This device is suitable for the control of the lubrication cycle at preselected intervals.

Life: 1 million cycles approximately.

Characteristics of the contact:

Max. 220V 50-60 Hz 5A

Outlets	Part No.					
	A			A • C		
cc.	1.5	3	4.5	1.5	3	4.5
cu.in.	.09	.18	.27	.09	.18	.27
BSP	644164	644165	644166	644162	644183	644184
NPTF	643359	643360	643361	643377	643378	643379
Metric	645080	645081	645082	645098	645099	645100



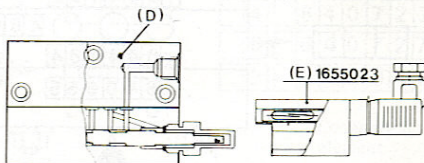
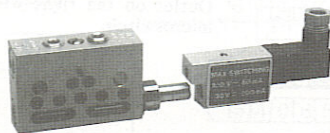
### MOVEMENT MONITORING OF METERING ELEMENT PISTON BY MEANS OF A MAGNETIC CONTACT

A permanent magnet applied to the piston acts on a "reed" contact, which if connected to an electronic counter, can visualize up to 500 movements per minute. The Reed contact is inserted in a water tight container and can be easily substituted. The metering element with such a device, if fixed to a metal part, must have a gap of at least 10 mm (.39 in.). The best mounting is with the device upwards and the outlets downwards.

Characteristics of the contact:

Max. 220V 50-60 Hz 0.8 A

Outlets	Part No.					
	D			D • E		
cc.	1.5	3	4.5	1.5	3	4.5
cu.in.	.09	.18	.27	.09	.18	.27
BSP	644191	644192	644193	644200	644201	644202
NPTF	643386	643387	643388	643395	643396	643397
Metric	645107	645108	645109	645116	645117	645118



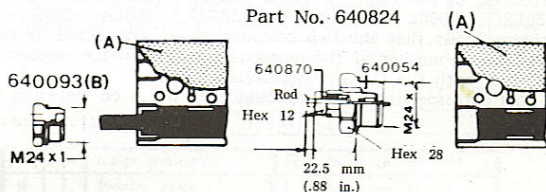
### VISUAL MONITORING OF THE METERING ELEMENT PISTON'S MOVEMENT STANCH FITTING

It can be installed for visual indication or using the movement of the piston pin.

Outlets	Part No.		
	A		
cc.	1.5	3	4.5
cu.in.	.09	.18	.27
BSP	644164	644165	644166
NPTF	643359	643360	643361
Metric	645080	645081	645082

Outlets	Part No.		
	A • B		
cc.	1.5	3	4.5
cu.in.	.09	.18	.27
BSP	644173	644174	644175
NPTF	643368	643369	643370
Metric	645089	645090	645091

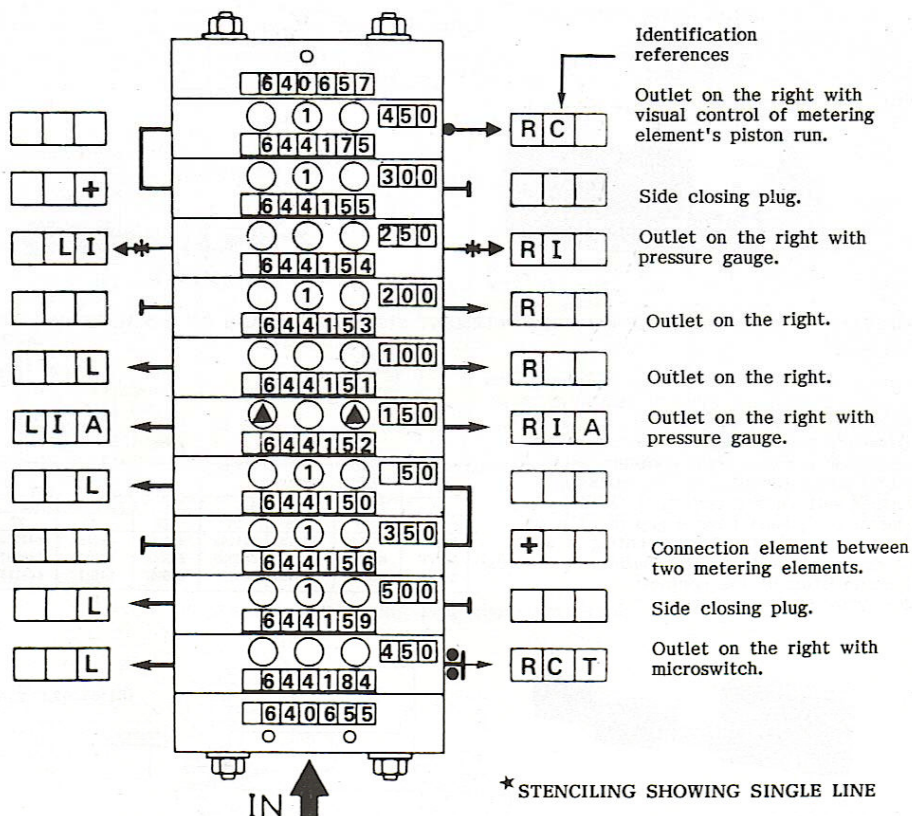




# COMPOSITION OF SERIAL "SA" METERING ELEMENTS BLOCKS

IDENTIFICATION DIAGRAM FOR ALL DEVICES, WHICH CAN BE USED IN A BLOCK OF 10 METERING ELEMENTS

For description of the legend, see at bottom of page 31



Note: Letter "R" indicates assembly on the right.  
Letter "L" indicates assembly on the left.

The block may be ordered without giving the single code numbers, but just using the identification references. In this case the block will be identified as follows:

450LRCT 500L 350+50L 150LIARIA 100LR 200R 250LIRI 300+450RC

Symbol + shows that the two components are connected by means of a bridge connection.

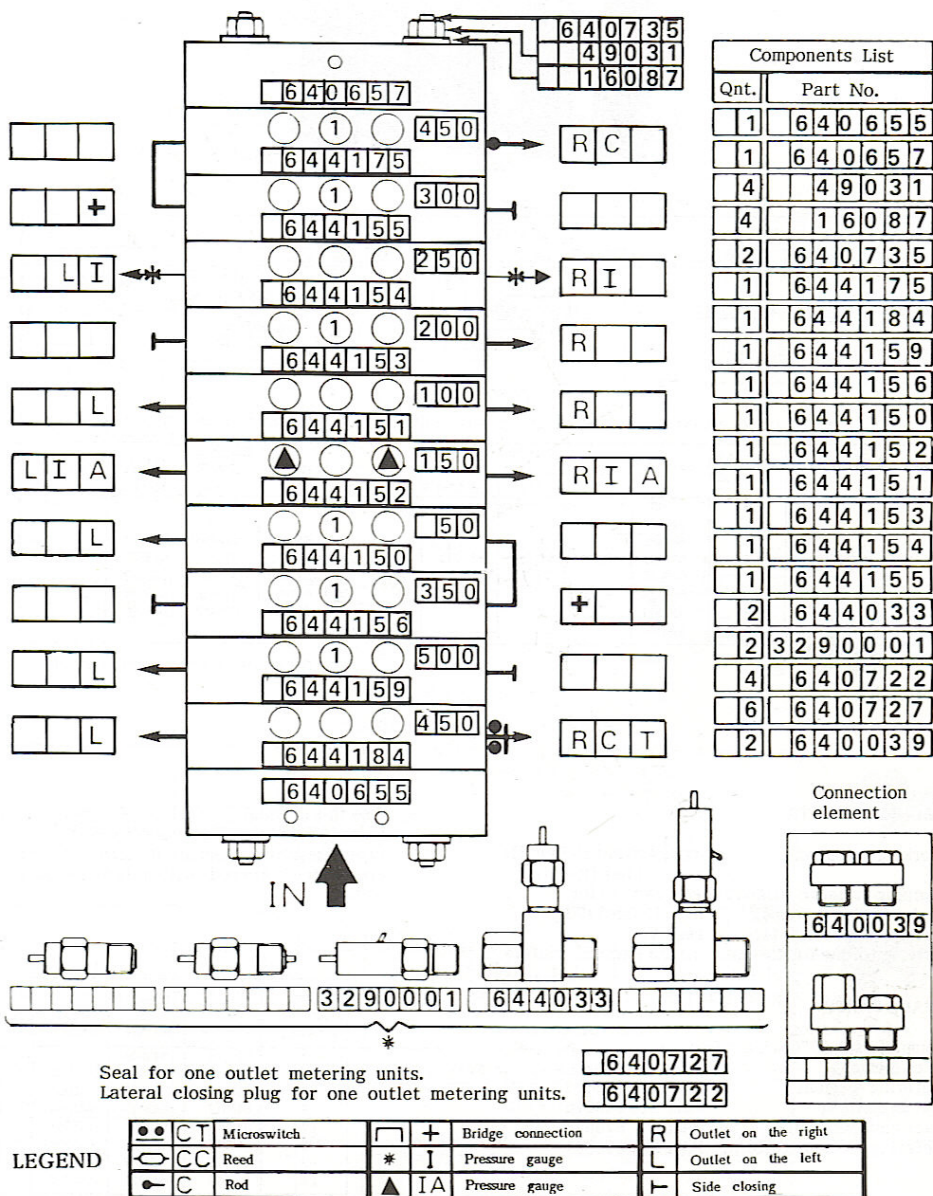
Identification number of the component refers to the number of the metering element given on the catalogue: with the Q value multiplied by 100.

e.g. 150 corresponds to a component with a 1.5 cc metering element.

# COMPOSITION OF SERIAL "SA" METERING ELEMENTS BLOCKS

## LISTING DIAGRAM FOR ORDERING A BLOCK MADE OF DIFFERENT PARTS

For codes and characteristics of the single components, see at pages 26 : 29



Seal for one outlet metering units.

Lateral closing plug for one outlet metering units.

6 4 0 7 2 7

6 4 0 7 2 2

Connection element

