nP

NANO- PROGRESSIVE

Characteristics

- Operates up to 300 bar (4350 PSI)
- Divides oil or grease
- Top or side outputs as standard
- Single or dual outlet settable by central plug
- Full range of pressure and spool monitoring accessories interchangeable with SMO product line
- The two outputs are combined by replacing the adapter. Just take one item of stock
- Secure and controlled lubrication
- Simple and flexible assembly with low maintenance costs
- Bright left/right/Both elements eliminate the need for external cross porting
- Different inlet module with different hole-centers for easy interchangeability

Application

- Machine tools
- Textiles

Metering Divider Elements For The Volumetric Distribution Of Oils And Grease

Dropsa's **nano-Progressive** (**nP**) thanks to their compact and solid design are the ideal solution for grease lubrication applications that require small and accurately dispensed quantity of lubricant in a confined space.

Thanks to a patented **RigidLock, nano-Progressive (nP)** novel interlocking mechanism between the elements it has the rigidity of a mono-block divider but the flexibility of a modular segmented unit.

nP is a distributor that allows the feed flow rate be regulated in order to dispense very precise amounts to diverse outlets by means of the progressive movement of coupled pistons with micrometre-sized gears on the inside of the sliding hole.

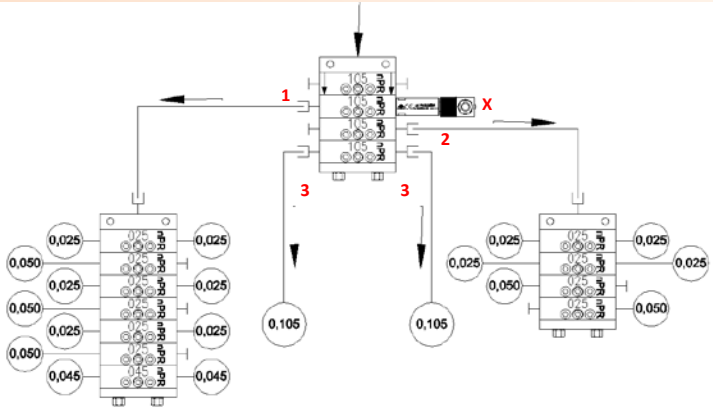
The lubrication cycle can be controlled by a single sensor including the Dropsa solid state Ultrasensor product.

These divider elements may be used in a variety of system configurations and have different operating configurations making them flexible for use in multiple applications as a result.

These dividers can be used in a variety of system configurations with different operating configurations making them them flexible for use in multiple applications. The compactness makes them particularly suitable for use in confined spaces.

OPERATING PRINCIPLE

The system can be easily extended and the modular concept provides low cost replacement of component.

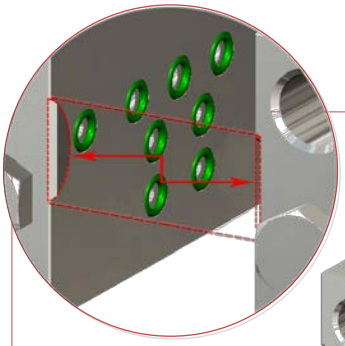


The **nP105** metering element (1) pilots a block of 6 metering 0,025 nP delivering elements and one 0,045 nPr.

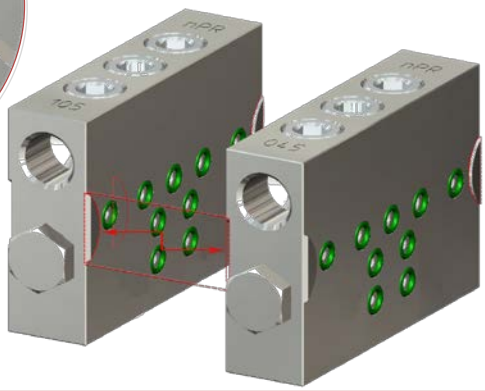
The **nP105** metering element (2) pilots a block of 4 0,025 nP delivering elements.

The **nP105** metering element (3) directly lubricates two point of the machine.

The cycle is controlled by the Ultrasensor cycle indicator (X).



RIGIDLOCK



THE RIGIDLOCK SYSTEMS CREATES A RIGID INTERLOCKING MECHANISM BETWEEN THE ELEMENTS ALLOWING FOR THE QUICK REPLACEMENT AND CORRECT REPOSITIONING OF THE ELEMENT

nP

NANO- PROGRESSIVE

ADVANTAGES

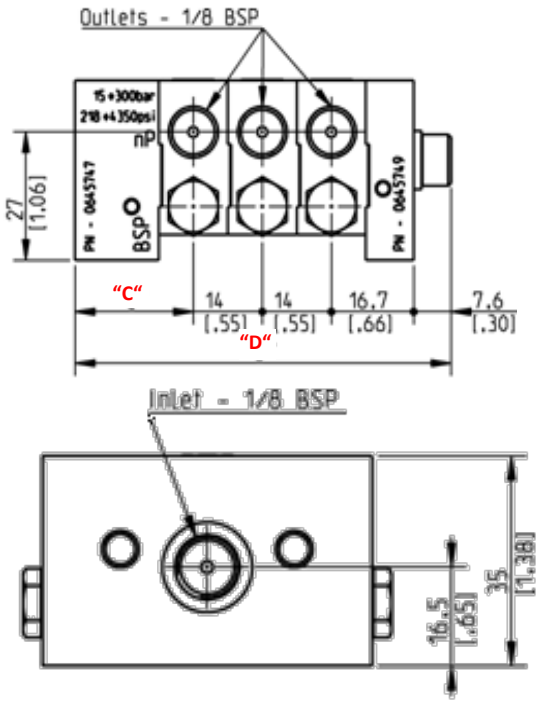
- By combining a reduced space-envelope and maintaining modularity in a single package the nano-Progressive dividers offer many of the features found in top-of-line dividers at a fraction of the cost.
- The RigidLock Systems creates a rigid interlocking mechanism between the elements allowing for the quick replacement and correct repositing of the element;
- A full range of accessories and bridge elements allows for flexible engineering choices.

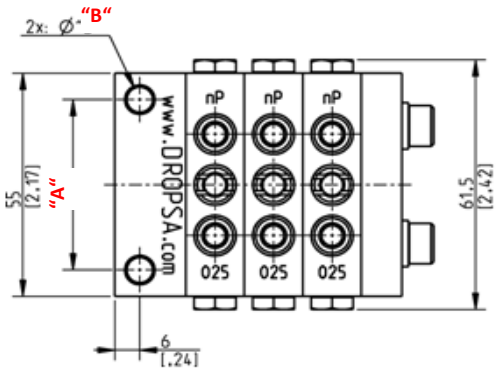
TECHNICAL INFORMATION

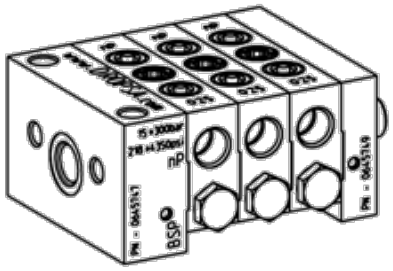
GENERAL CHARACTERISTICS	
Singular outlet Flowrate	*0.0015 cu.inch – 0.0027 cu.inch – 0.0045 cu.inch - 0.0064 cu.inch (0,025cm³ - 0,045cm³ - 0,075cm³ - 0,105cm³)*
Number of Dividers elements	*3 ÷ 12*
Working pressure	*15bar (218psi) ÷ 300bar (4350psi)*
Working temperature	*-20°C ÷ +80°C*
Material	*Nickel-plated steel*
Number of inversion at minute	*200 max (according to pressure and viscosity)*
Inlet thread	*1/8" BSP*
Outlet thread	*1/8" BSP*
Lubricants	*Min. Oil. 32 cSt –max. 2 NLGI grease*

N.B.: The pressure drop is directly proportional to the number of cycles.
The oil and grease viscosity values always refer to the operating temperature.

DIMENSIONS







	INLET nP – standard version mm [inch]				INLET nP -S 20mm reduced hole centers mm [inch]			
N° elements	**"A"**	**"B"**	**"C"**	**"D"**	**"A"**	**"B"**	**"C"**	**"D"**
3	*42 [1.65]*	*6.2 [.24]*	*24 [.94]*	*76.3 [3]*	*20 [.79]*	*5.5 [.22]*	*30.5 [1.2]*	*82.8 [3.26]*
4				*90.3 [3.55]*				*96.8 [3.82]*
5				*104.3[4.11]*				*110.8 [4.36]*
6				*118.3 [4.66]*				*124.8 [4.91]*
7				*132.3 [5.21]*				*138.8 [5.46]*
8				*146.3 [5.76]*				*152.8 [6.02]*
9				*160.3 [6.31]*				*166.8 [6.57]*
10				*174.3 [6.86]*				*180.8 [7.12]*
11				*188.3 [7.41]*				*194.8 [7.67]*
12				*202.3 [7.96]*				*208.8 [8.22]*

NP

NANO- PROGRESSIVE

CONFIGURATION INFORMATION

IN FEW STEPS YOU CAN COMPOSE DIFFERENT KIND OF MODULES AS YOU NEED:

1. INLET ELEMENT

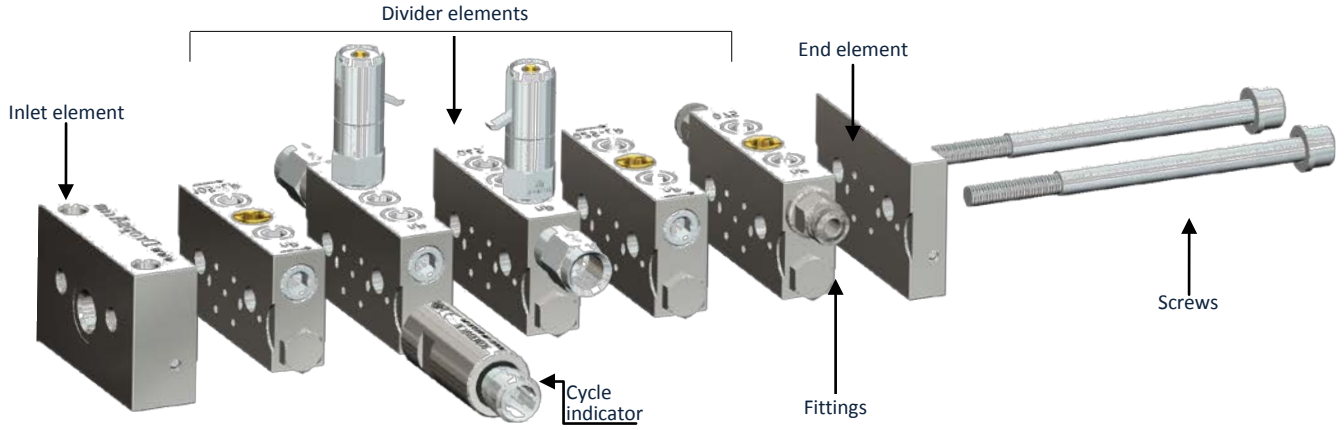
STANDARD ELEMENT	-S 20mm reduced
0645747	0645748

2. DIVIDER ELEMENT (REPEAT FOR NUMBER OF ELEMENTS)

FLOWRATE Q.cm³	STANDARD ELEMENT	ELEMENT WITH INDICATOR	BRIDGE ELEMENT		
			LEFT	RIGHT	LEFT/ RIGHT
0.025	0645750	0645778	0645754	0645758	0645762
0.045	0645751	0645779	0645755	0645759	0645763
0.075	0645752	0645780	0645756	0645760	0645764
0,105	0645753	0645781	0645757	0645761	0645765

3. END ELEMENT

PART NO.
0645749 + 0016047 (ø6 washer)



4.FITTINGS

ITEM	DESCRIPTION	PART N.
PRESSURE INDICATOR	30bar with memory pin	3290000
	50bar with memory pin	3290001
	75bar with memory pin	3290022
	100bar with memory pin	3290002
	150bar with memory pin	3290003
	200bar with memory pin	3290004
	250bar with memory pin	3290005
	300bar with memory pin	3290021
	20bar with pin	3290019
	30bar with pin	3290006
	50bar with pin	3290007
	100bar with pin	3290008
	150bar with pin	3290009
	200bar with pin	3290010
	250bar with pin	3290011
	30 bar with membrane	3290012
	50 bar with membrane	3290013
	100 bar with membrane	3290014
	150 bar with membrane	3290015
	200 bar with membrane	3290016
	250 bar with membrane	3290017
CYCLE INDICATOR	ULTRASENSOR + (M12 Connector)	1655308 + 0039999

DESCRIPTION	PART N.
Assembly Kit 3 elements	3140826
Assembly Kit 4 elements	3140827
Assembly Kit 5 elements	3140828
Assembly Kit 6 elements	3140829
Assembly Kit 7 elements	3140830
Assembly Kit 8 elements	3140831
Assembly Kit 9 elements	3140832
Assembly Kit 10 elements	3140833
Assembly Kit 11 elements	3140834
Assembly Kit 12 elements	3140835

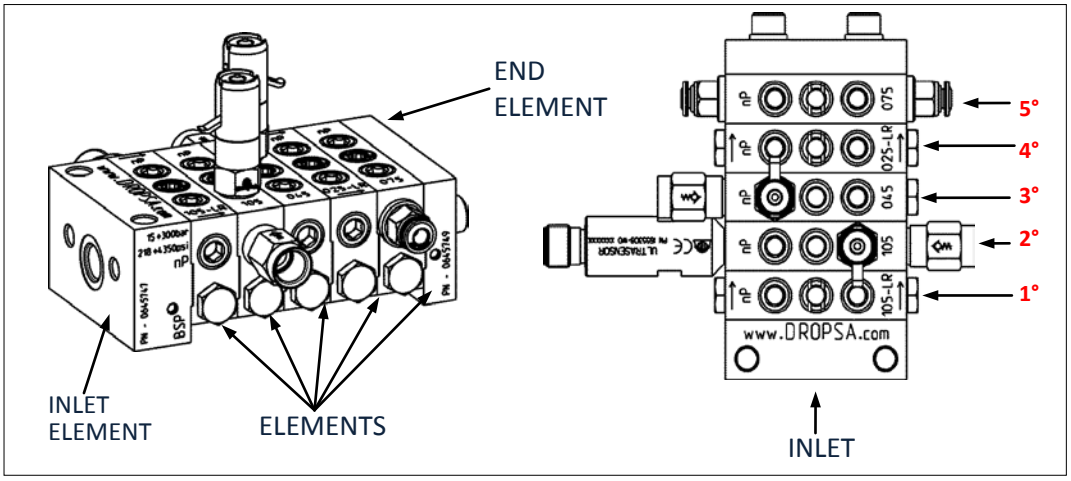
Each kit includes 2 screws, 2 washers, plugs and single outlet adaptors according to the number of elements.

ITEM	DESCRIPTION	PART N.
FITTINGS	1/8" valved fitting for OUTLET	0092335
	1/8" valved fitting for INLET	0092555
	Ø6 double-tapered terminal (150bar)	0092080
	Ø4 double-tapered terminal (150bar)	0092069
	Ø4 ring fitting (250bar)	0091942
	Push-in Ø4 (65bar)	3084577
	Push-in Ø6 (65bar)	3084578
	Swivel Push-in 90° Ø6 (150bar)	3084695
	Swivel Push-in 90° Ø4 (150bar)	3084696
TUBING	Ø6x1 Drawn steel tube (400bar)	5119812
	Ø4x1 Drawn steel tube (500bar)	5119832
	ASTM Ø6x0,71 Copper steel tube	5118001
	ASTM Ø4x0,71 Copper steel tube	5118000
	Ø4x0,5 Annealed copper tube (133bar)	5501201
	Ø6x1 Annealed copper tube (200bar)	5501203
	PA Ø4xØ2,5 Tube (60bar)	5717202
	PA Ø6xØ4 Tube (50bar)	5717203
SCREWS order 2 per assembly	3 elements	0014396
	4 elements	0014181
	5 elements	0014397
	6 elements	0014182
	7 elements	0014191
	8 elements	0014398
	9 elements	0014399
	10 elements	0014400
	11 elements	0014401
	12 elements	0014402

ITEM	DESCRIPTION	PART N.
Washer (order 2 per assembly)	ø6 washer	0016047
Plug and Adaptor	Single outlet adaptor	0641708
	Plug 1/8 BSP	3232098

nP

NANO- PROGRESSIVE



Note: to determine the left and right outlets, be noted that the assembly is seen vertically and metering elements are numbered sequentially starting from the bottom (inlet).

Indicate the full string of the package as in the following ordering example:

nP 5 — *105 BLR – 105 SR USL M 75 UR OC8BK – 045 SL M 100 UL OC8BK – 025 BLR – 075 OP4*

1° 2° 3° 4° 5°

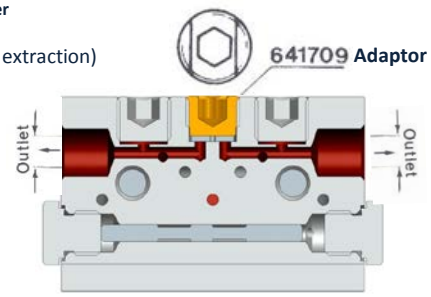
Config. INLET and PACK		
TYPE	**INLET**	**N° ELEMENTS**
nP	***Empty*** Standard Hole centers 42mm	***3÷12***
	S Reduced Hole center 20mm	

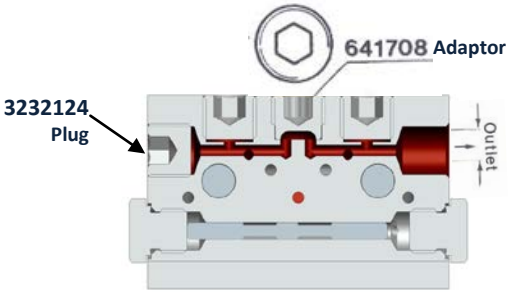
ELEMENT configuration (repeat for N° element)						
			PRESSURE COTROL			
FLOWRATE [cm³]	**OUTLET**	**CYCLE CONTROL**	**TYPE**	**PRESSURE [bar]**	**POSITION**	**OUTLET FITTINGS**
025 0,025	***Empty*** both	***US*** Ultrasensor right side	***M*** with memory rod	***30-50-75 100-150-200 250-300***	***L*** left	***OP4*** Ø4 Push-in
045 0,045	***SL*** single left	***USL*** Ultrasensor left side	***P*** with rod	***20-30-50 100-150 200-250***	***R*** right	***OP6*** Ø6 Push-in
075 0,075	***SR*** single right	***V*** visual right side	***B*** with membrane	***30-50 100-150 200-250***	***LR*** left right	***OC8BK*** 1/8" BSP valved
105 0,105	***BL*** bridge left	***VL*** visual left side			***UL*** *Single left upper*	***OC8NK*** 1/8" NPT valved
	BR bridge right				***UR*** *Single right upper*	
	BLR bridge left & right				***URL*** *Single right & left upper*	
	U *Both Upper*					
	UL *Single left upper*					
	UR *Single right upper*					

SINGLE AND DOUBLE OUTLET CONVERSION

It is possible to combine the two flow rates of the same divider element by replacing the yellow Adapter Part No. 0641709 with the white Adapter Part No. 0641708 as shown in the drawing. When the two outlets are connected, remember to close off the one not being used with a plug (Part no. 3232098)

Sealing disc-washer
Part No. **641791**
(With hole for extraction)





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