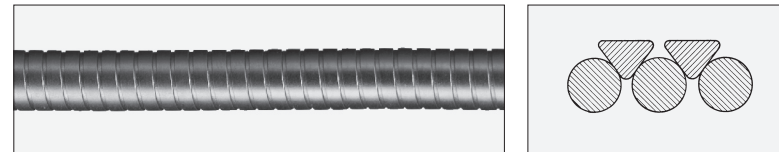


Goose-necks

High load-bearing capacity, flexible yet with high bending resistance, robust and versatile: these are the hallmarks of our “flexible arms” made of stainless steel. Among other applications, goose-necks are used as both microphone and lamp holders, for optoelectronic devices and as cooling hoses for machine tools. The extensive range of versions available is matched by the variety of uses to which they can be put. Flexible arms are available in lacquered, chrome- or nickel-plated finish, in nominal sizes between 6 and 18 mm supplied with suitable connectors.

## Type BA

Goose-necks

**Application:**

Flexible arms, popularly known as “goose-necks”, for uses such as lamp bracket hoses or microphone arms. Applications are also standard in fibreoptics (cold light sources, measuring devices), for welding shields, in traffic control technology, car telephones, medical-equipment manufacture etc.

**Design:**

- Flexible yet resistant to bending
- Combination of interior round wire with a triangular wire coil inserted from outside

**Versions:**

In many cases it is our common practice to make customised versions; here we can only list the standard series. If this does not cover your needs and you have application-specific requirements, please let us know. Take advantage of our long experience and expert advice.

**Load-bearing capacity:**

The load-bearing capacity of flexible arms is a function of their nominal size (NG) and the length of the support coil. The

term “carrying length” (l) describes the length at which a vibration-free support coil, horizontally clamped on one side, is permitted to sink under its own weight by a distance not exceeding its own inside diameter. The diagram on the next page shows the relationship between nominal size (NG) and maximum load (p).

**Notes on installation:**

Flexible arms are to be bent evenly; on no account is the minimum bending radius to be exceeded.

**Supply:**

Possible at short notice

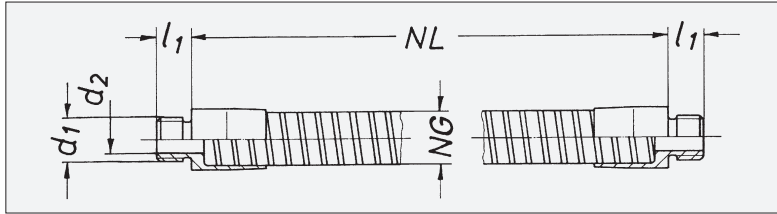
**Order specifications:**

- Flexible arm, blank, NL 90 up to 4000 mm, Type BA 151L11
- Flexible arm, high-gloss nickel-plated, NL 90 up to 760 mm, Type BA 152L11
- Flexible arm, high-gloss chromium-plated, NL 90 up to 760 mm, Type BA 153L11
- Flexible arm, matt chromium-plated, NL 90 up to 760 mm, Type BA 154L11
- Flexible arm, matt black finish, NL 90 up to 800 mm, Type BA 156L11

### 5.3 | Flexible arms

#### Type BA

Goosenecks

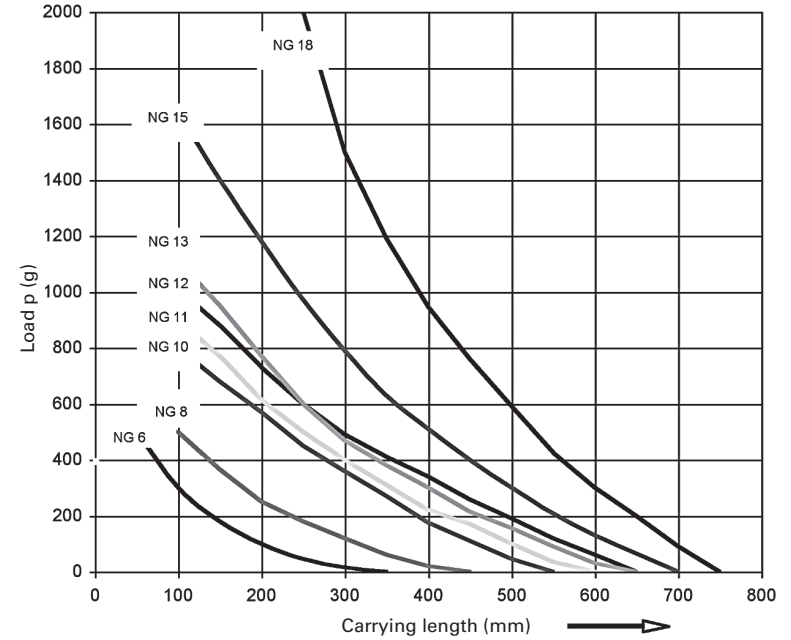


NG	Support coil		Connection dimensions			Minimum bending radius	Weight approx.
	Inner Ø	Tol.	$d_1$	$d_2$	$l_1$		
mm	mm	mm	mm	mm	mm	mm	kg/m
6	2.6	+0.2 / -0.1	M8 x 1	3.0	8	35	0.150
8	3.9	+0.1 / -0.2	M10 x 1	6.5	8	45	0.250
10	5.3	+0.1 / -0.2	M10 x 1	6.5	8	55	0.350
11	5.3	+0.1 / -0.2	M10 x 1	6.5	8	50	0.465
12	6.7	+0.1 / -0.2	M10 x 1	6.5	8	60	0.470
13	7.1	+0.1 / -0.2	M10 x 1	6.5	8	60	0.590
15	7.3	+0.1 / -0.2	M10 x 1	6.5	8	65	0.850
18	7.7	+0.1 / -0.3	M10 x 1	5.0	8	120	1.30

### 5.3 | Flexible arms

#### Type BA

Goosenecks

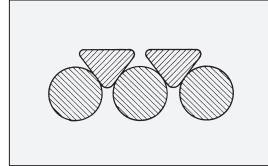
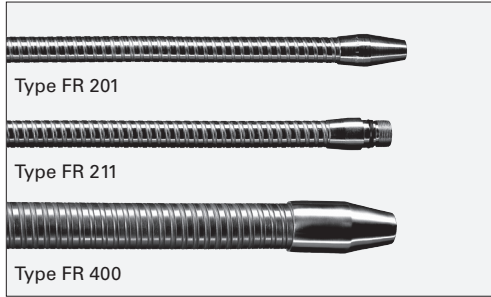


### 5.3 | Flexible arms

#### Type FR

Coolant hoses

HYDRA



#### Application:

Coolant hoses convey liquid and gaseous coolants or lubricants during metal cutting. They can also be used to blow away shavings and metal parts in moulds and workpieces, as well as those arising from use of stamping parts.

#### Properties:

- Small bending radii, enabling them to be precisely adjusted in the desired direction.
- Reliably maintain alignment even under high pressure, without showing fatigue or vibrating
- Robust and resistant to wear and tear
- Resistant to hot shavings, oils and greases

#### Design:

- Support coil consists of two profilated wires wound one on top of the other
- A PVC hose is inserted inside

### 5.3 | Flexible arms

#### Type FR

Coolant hoses

HYDRA

DN	Whitworth pipe thread ISO 228/1 d	l mm	AF mm
6	G 1/4	45	22
8	G 3/8	45	22
10	G 1/2	55	27
16	G 3/4	65	32

#### Versions:

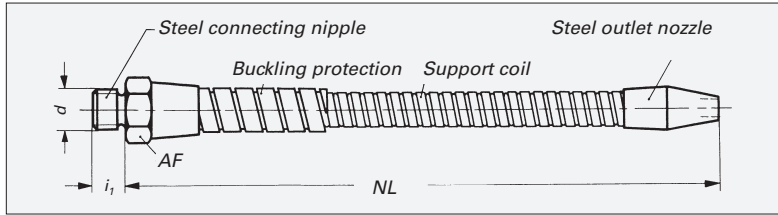
A range of versions is available for different applications:

- Type FR 201: Standard versions with fixed threaded pins and outlet nozzles
- Type FR 211: Coolant hose with connection for interchangeable nozzles
- Type FR 400: High-pressure hose assembly for strong mechanical stresses, as in casting plants, in both machine and tool construction, in plastic injection-moulding machines, and on calendars as separating spray pipes for parting agents.

### 5.3 | Flexible arms

#### Type FR 201

Coolant hoses



Steel supporting coil with PVC interior hose, threaded pin and steel outlet nozzle, nickel-plated hose surface with additional buckling protection up to and including DN 10.

DN	Connecting nipple DIN 3852-A, part 2		AF	Minimum bending radius	Nominal length approx. NL						
	d	i <sub>1</sub>			± 5						
-	inches	mm	mm	r <sub>min</sub> mm	mm						
4	G 1/8	8	15	64	200	250	320	400	-	-	-
6	G 1/4	10	19	72	200	250	320	400	500	630	-
8	G 3/8	10	24	88	-	250	320	400	500	630	-
10	G 1/2	12	27	110	-	-	320	400	500	630	800
16	G 3/4	12	36	110	-	-	-	-	500	630	-

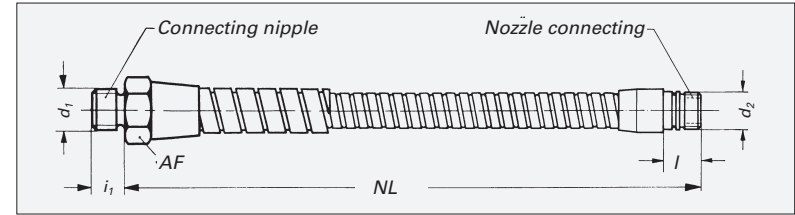
On stock – immediately available. Prior sale reserved.

Please quote when ordering: type of hose, nominal diameter (DN) and nominal length (NL).

### 5.3 | Flexible arms

#### Type FR 211

Coolant hoses



Steel support coil with PVC interior hose, threaded steel pins, connection with O-ring for interchangeable brass or aluminium nozzles, nickel-plated hose surface, with additional buckling protection up to and including DN 10.

DN	Connecting nipple DIN 3852-A, part 2		AF	Nozzle connecting		Minimum bending radius	Nominal length approx. NL					
	d	i <sub>1</sub>		i			± 5					
-	Zoll	mm	mm	mm	mm	r <sub>min</sub> mm	mm					
4	G 1/8	8	15	M10 x 1	12.0	64	220	250	320	400	-	-
6	G 1/4	10	19	M12 x 1	15.5	72	200	250	320	400	500	-
8	G 3/8	10	24	M16 x 1	17.5	88	-	250	320	400	500	630
10	G 1/2	12	27	M18 x 1	19.0	110	-	-	320	400	500	630
16	G 3/4	12	36	M26 x 1.5	27.0	110	-	-	-	-	500	630

On stock – immediately available. Prior sale reserved.

Please quote when ordering: type of hose, nominal diameter (DN) and nominal length (NL).

### 5.3 | Flexible arms

#### Type DUE 110, DUE 411, DUE 510

Accessories for coolant hoses; interchangeable nozzles



#### Flat nozzle type DUE 110

- Aluminium, blank

DN	d mm	l mm	Outlet b x e mm
4	M10 x 1	34	16 x 0.8
6	M12 x 1	40	21 x 1.4
8	M16 x 1	50	26 x 2.0
10	M18 x 1	60	32 x 2.5
16	M26 x 1.5	70	44 x 3.0

#### Adjustable nozzle DUE 411

- Nozzle can be turned off
- Nickel-plated brass

DN	d mm	l mm
4	M10 x 1	28
6	M12 x 1	36
8	M16 x 1	44
10	M18 x 1	52
16	M26 x 1.5	55

#### Special nozzle type DUE 510

- Non bored nozzle, semi-finished by turning
- For special nozzle exits to be created
- Brass, blank

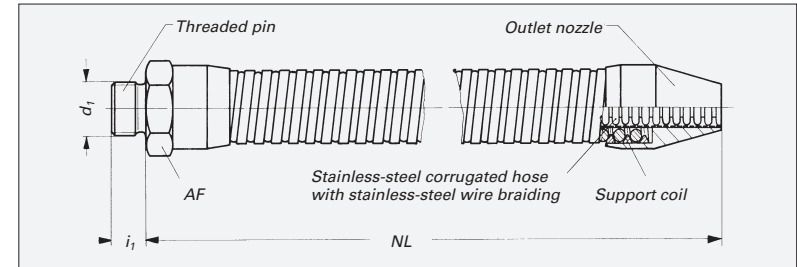
DN	d <sub>1</sub> mm	l mm	d <sub>2</sub> mm
4	M10 x 1	28	12
6	M12 x 1	36	15
8	M16 x 1	44	19
10	M18 x 1	52	23
16	M26 x 1.5	55	31.5

On stock – immediately available. Prior sale reserved. Please quote when ordering: type, nominal diameter (DN)

### 5.3 | Flexible arms

#### Type FR 400

Coolant hoses for high-pressure applications



- Self-supporting high-pressure hose assembly up to 250° C
- Interior annularly corrugated hose with braiding, made entirely of stainless steel
- Outside steel support coils, outlet nozzles and threaded brass pins

DN	Connecting nipple DIN 3852-A, part 2		AF	Minimum bending radius	Nominal pressure PN	Nominal length approx. NL			
–	d <sub>1</sub>	i <sub>1</sub>	–	r <sub>min</sub>	–	± 5			
–	inches	mm	mm	mm	bar	mm			
6	G 1/4	12	24	110	160	320	400	500	630
10	G 3/8	12	30	110	100	320	400	500	630

Available at short notice. Please quote when ordering: type of hose, nominal diameter (DN), nominal length (NL)