

MINING
PRODUCTS CATALOGUE

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MANULI HYDRAULICS MINING PRODUCTS

Manuli Hydraulics are focused on achieving excellence in the design, manufacture and supply of fluid conveyance solutions, components and associated equipment for high pressure hydraulic applications. Encompassed within this, they are a specialist manufacturer of staple adaptors and ball valves extensively used in underground mining operations.

Staple connections are an integral part of the hydraulic circuit in mining and have a proven track record of being the best option for connecting and disconnecting hydraulic lines, in a tough and challenging environment. The staple design provides a simple, easy and effective way to connect, disconnect and isolate hydraulic lines even in complicated or compact applications.

Manuli Hydraulics has experienced engineering personnel capable of developing and designing new adaptors for specialist applications, and recognises this as an important service to the mining industry.

All Manuli Hydraulics mining products are manufactured to meet or exceed international mining specifications and are supplied from a modern, well equipped ISO 9001 facility. Staple adaptors and ball valves are available from size DN6 (1/4") up to DN76 (3").



ASA Series Staple Adaptors

The ASA SERIES is the traditional design of staple adaptor available with male and female staple ends as well as threaded options.

The ASA staple adaptor is available in a wide range of configurations and sizes from DN6 (1/4") to DN76 (3"). Manuli Hydraulics' staple adaptors undergo surface treatment to produce a highly corrosion resistant surface, capable of meeting the demands of a tough working environment. To cope with extreme conditions, adaptors are also available in stainless steel.

The ASA staple adaptor meets or exceeds all International Standards including DIN 20043, BS 6537, SAE J1467 and NCB 638 and is subject to in-house burst and impulse testing to verify the product performance.



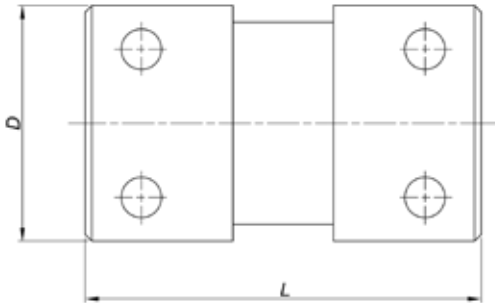
STAPLE ADAPTORS

STAPLE
ADAPTORS

A-II

STRAIGHT STAPLE FEMALE ADAPTOR

SERIES ASA01



PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASA01-04-04	4	1/4	6	58	25
ASA01-06-06	6	3/8	10	58	32
ASA01-08-08	8	1/2	12	59	35
ASA01-12-12	12	3/4	19	59	45
ASA01-16-16	16	1	25	67	55
ASA01-20-20	20	1.1/4	31	67	60
ASA01-24-24	24	1.1/2	38	75	76
ASA01-32-32	32	2	51	75	85
ASA01-40-40	40	2.1/2	63	136	100
ASA01-48-48	48	3	76	190	120

All dimensions in mm

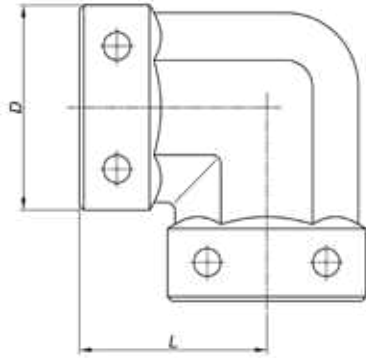
STAPLE ADAPTORS

90° STAPLE FEMALE ADAPTOR

SERIES ASA02

STAPLE
ADAPTORS

A-2



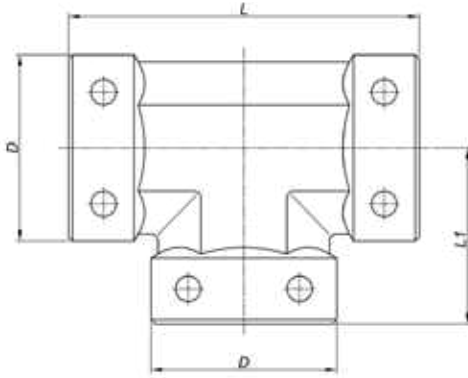
PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASA02-04-04	4	1/4	6	38	25
ASA02-06-06	6	3/8	10	38	32
ASA02-08-08	8	1/2	12	40	35
ASA02-12-12	12	3/4	19	42	45
ASA02-16-16	16	1	25	50	55
ASA02-20-20	20	1.1/4	31	54	62
ASA02-24-24	24	1.1/2	38	68	72
ASA02-32-32	32	2	51	71	85
ASA02-40-40	40	2. 1/2	63	107	106
*ASA02-48-48	48	3	76	162	120

* Welded design

All dimensions in mm

T PIECE STAPLE FEMALE ADAPTOR

SERIES ASA03



PART REF	NOMINAL BORE			L	L1	D
	DASH	INCH	DN			
ASA03-04-04-04	4	1/4	6	76	38	25
ASA03-06-06-06	6	3/8	10	76	38	32
ASA03-08-08-08	8	1/2	12	80	40	35
ASA03-12-12-12	12	3/4	19	84	42	45
ASA03-16-16-16	16	1	25	100	50	55
ASA03-20-20-20	20	1.1/4	31	108	54	60
ASA03-24-24-24	24	1.1/2	38	136	68	76
ASA03-32-32-32	32	2	51	142	71	85
*ASA03-40-40-40	40	2.1/2	63	300	150	106
*ASA03-48-48-48	48	3	76	407	203	120

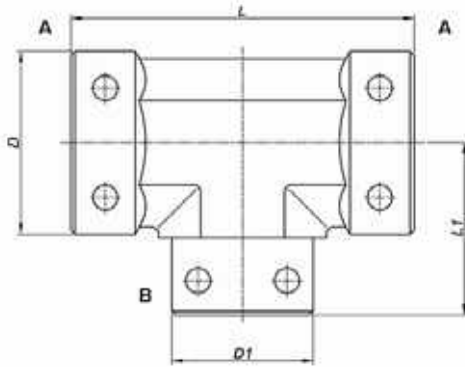
* Welded design

All dimensions in mm

STAPLE ADAPTORS

REDUCING T PIECE STAPLE FEMALE ADAPTOR

SERIES ASA03

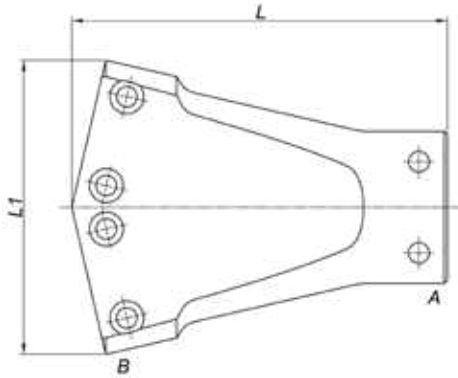


PART REF	NOMINAL BORE						L	D	L1	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASA03-08-08-06	8	1/2	12	6	3/8	10	80	35	40	32
ASA03-12-12-06	12	3/4	19	6	3/8	10	86	45	43	32
ASA03-12-12-08	12	3/4	19	8	1/2	12	86	45	43	35
ASA03-16-16-06	16	1	25	6	3/8	10	100	55	50	32
ASA03-16-16-08	16	1	25	8	1/2	12	100	55	50	35
ASA03-16-16-12	16	1	25	12	3/4	19	100	55	50	45
ASA03-20-20-06	20	1.1/4	31	6	3/8	10	108	60	54	32
ASA03-20-20-08	20	1.1/4	31	8	1/2	12	108	60	54	35
ASA03-20-20-12	20	1.1/4	31	12	3/4	19	108	60	54	45
ASA03-20-20-16	20	1.1/4	31	16	1	25	108	60	54	55
ASA03-24-24-16	24	1.1/2	38	16	1	25	136	76	68	55
ASA03-24-24-20	24	1.1/2	38	20	1.1/4	31	136	76	68	60
ASA03-32-32-20	32	2	51	20	1.1/4	31	140	85	70	60
ASA03-32-32-24	32	2	51	24	1.1/2	38	140	85	70	76

All dimensions in mm

Y PIECE STAPLE FEMALE ADAPTOR

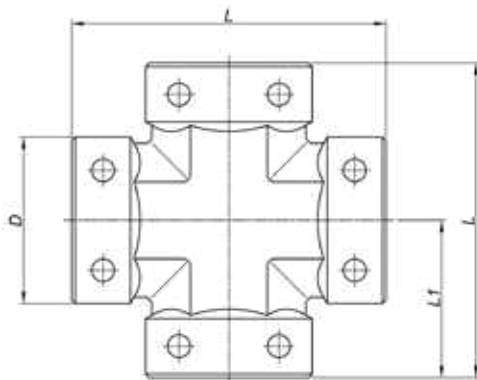
SERIES ASA03Y



PART REF	NOMINAL BORE						L	L1
	SIDE "A"			SIDE "B"				
	DASH	INCH	DN	DASH	INCH	DN		
ASA03Y-06-06-06	6	3/8	10	06	3/8	10	83	62
ASA03Y-08-08-08	8	1/2	12	08	1/2	12	95	70
ASA03Y-12-08-08	12	3/4	19	08	1/2	12	96	73
ASA03Y-12-12-12	12	3/4	19	12	3/4	19	107	80

CROSS PIECE STAPLE FEMALE ADAPTOR

SERIES ASA04



PART REF	NOMINAL BORE			L	L1	D
	DASH	INCH	DN			
ASA04-04-04-04-04	4	1/4	6	76	38	25
ASA04-06-06-06-06	6	3/8	10	76	38	32
ASA04-08-08-08-08	8	1/2	12	80	40	35
ASA04-12-12-12-12	12	3/4	19	84	42	45
ASA04-16-16-16-16	16	1	25	100	50	55
ASA04-20-20-20-20	20	1.1/4	31	108	54	60

All dimensions in mm

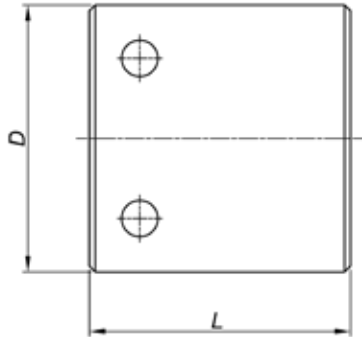
STAPLE ADAPTORS

STAPLE END CAP

SERIES ASA06

STAPLE
ADAPTORS

A-6

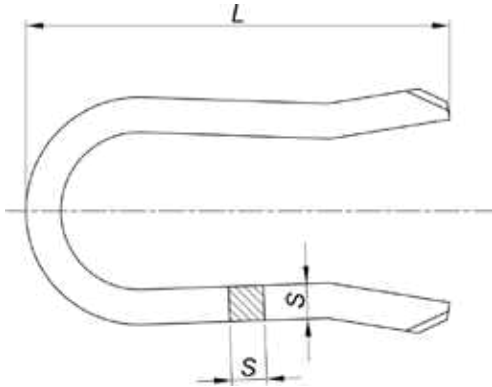


PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASA06-04	4	1/4	6	39	25
ASA06-06	6	3/8	10	40	32
ASA06-08	8	1/2	12	43	35
ASA06-12	12	3/4	19	44	45
ASA06-16	16	1	25	52	55
ASA06-20	20	1.1/4	31	55	60
ASA06-24	24	1.1/2	38	65	76
ASA06-32	32	2	51	70	85
ASA06-40	40	2.1/2	63	112	106
ASA06-48	48	3	76	138	120

All dimensions in mm

STANDARD STAPLE

SERIES ASA07



PART REF	NOMINAL BORE			S	L
	DASH	INCH	DN		
ASA07-04	4	1/4	6	4	38
ASA07-06	6	3/8	10	4	42
ASA07-08	8	1/2	12	4	48
ASA07-12	12	3/4	19	4	55
ASA07-16	16	1	25	6	74
ASA07-20	20	1.1/4	31	6	83
*ASA07-24FL	24	1.1/2	38	6	85
*ASA07-32FL	32	2	51	6	95

* Staple has a flat top

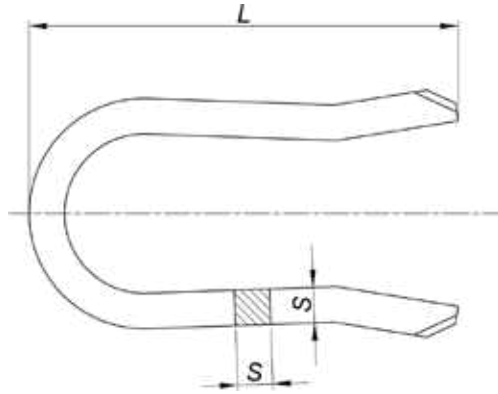
STAPLE ADAPTORS

STAINLESS STAPLE

SERIES ASA08

STAPLE
ADAPTORS

A-8



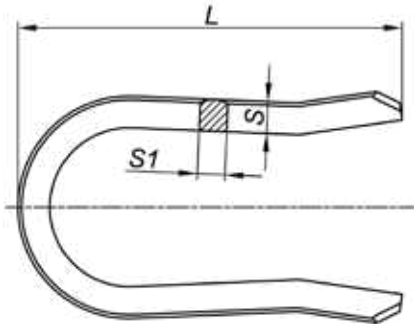
PART REF	NOMINAL BORE			S	L
	DASH	INCH	DN		
ASA08-04	4	1/4	6	4	38
ASA08-06	6	3/8	10	4	42
ASA08-08	8	1/2	12	4	48
ASA08-12	12	3/4	18	4	55
ASA08-16	16	1	25	6	74
ASA08-20	20	1.1/4	31	6	83
*ASA08-24	24	1.1/2	38	6	85
*ASA08-32	32	2	51	6	95
ASA08-40	40	2.1/2	63	6	100
ASA08-48	48	3	76	6	122

*staple has a flat top

All dimensions in mm

STAINLESS D STAPLE

SERIES ASA08D



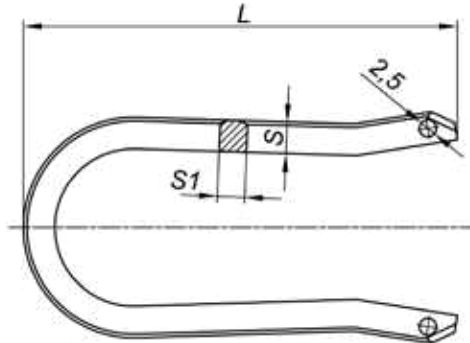
PART REF	NOMINAL BORE			S	S1	L
	DASH	INCH	DN			
ASA08D-04	4	1/4	6	4.6	4.5	39
ASA08D-06	6	3/8	10	4.6	4.5	42.5
ASA08D-08	8	1/2	12	4.6	4.5	48.5
ASA08D-12	12	3/4	19	4.6	4.5	55.5
ASA08D-16	16	1	25	6.6	6.5	74.5
ASA08D-20	20	1.1/4	31	6.6	6.5	83,5
*ASA08D-24	24	1.1/2	39	6.6	6.5	85.5
*ASA08D-32	32	2	51	6.6	6.5	95.5
*ASA08D-40	40	2.1/2	63	6.6	6.5	110
*ASA08D-48	48	3	76	6.6	6.5	120

*staple has a flat top

STAPLE ADAPTORS

DRILLED HOLES STAINLESS D STAPLE

SERIES ASA08D-DH



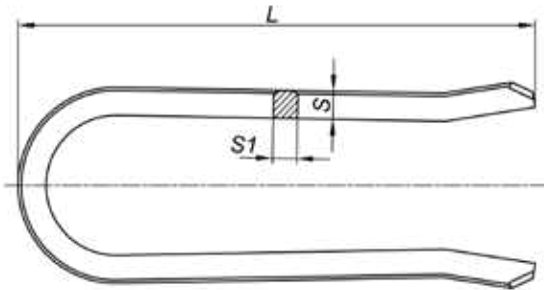
PART REF	NOMINAL BORE			S	S1	L
	DASH	INCH	DN			
ASA08D-06-44-DH	6	3/8	10	4.6	4.5	44
ASA08D-06-78-DH	6	3/8	10	4.6	4.5	78
ASA08D-06-100-DH	6	3/8	10	4.6	4.5	100
ASA08D-08-52-DH	8	1/2	12	4.6	4.5	52
ASA08D-12-63-DH	12	3/4	19	4.6	4.6	63
ASA08D-16-81-DH	16	1	25	6.6	6.5	81
ASA08D-20-90-DH	20	1.1/4	31	6.6	6.5	90
*ASA08D-32-106-DH	32	2	51	6.6	6.5	106
*ASA08D-32-115-DH	32	2	51	6.6	6.5	115
*ASA08D-32-123-DH	32	2	51	6.6	6.5	123
*ASA08D-32-130-DH	32	2	63	6.6	6.5	130
*ASA08D-40-115-DH	40	2.1/2	51	6.6	6.5	115
*ASA08D-40-123-DH	40	2.1/2	51	6.6	6.5	123
*ASA08D-40-130-DH	40	2.1/2	51	6.6	6.5	130

*staple has a flat top

All dimensions in mm

EXTRA LONG STAINLESS D STAPLE

SERIES ASA08D



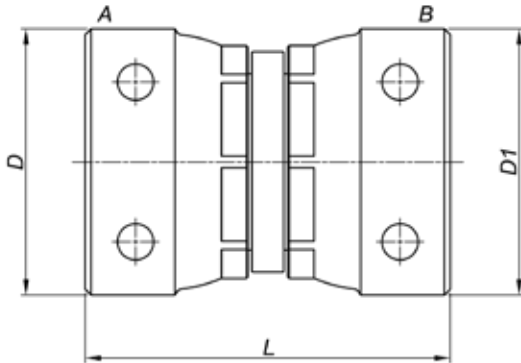
PART REF	NOMINAL BORE			S	S1	L
	DASH	INCH	DN			
ASA08D-04-73	4	1/4	6	4.6	4.5	73
ASA08D-06-50	6	3/8	10	4.6	4.5	50
ASA08D-06-55	6	3/8	10	4.6	4.5	55
ASA08D-06-78	6	3/8	10	4.6	4.5	78
ASA08D-06-82	6	3/8	10	4.6	4.5	82
ASA08D-06-85	6	3/8	10	4.6	4.5	85
ASA08D-06-90	6	3/8	10	4.6	4.5	90
ASA08D-06-100	6	3/8	10	4.6	4.5	100
ASA08D-08-90	8	1/2	12	4.6	4.5	90
ASA08D-08-100	8	1/2	12	4.6	4.5	100
ASA08D-08-108	8	1/2	12	4.6	4.5	108
ASA08D-08-110	8	1/2	12	4.6	4.5	110
ASA08D-12-60	12	3/4	19	4.6	4.5	60
ASA08D-12-65	12	3/4	19	4.6	4.5	65
ASA08D-12-80	12	3/4	19	4.6	4.5	80
ASA08D-12-100	12	3/4	19	4.6	4.5	100
ASA08D-16-105	16	1	25	6.6	6.5	105
*ASA08D-32-105	32	2	51	6.6	6.5	105
*ASA08D-32-123	32	2	51	6.6	6.5	123

*staple has a flat top

STAPLE ADAPTORS

STRAIGHT SWIVEL STAPLE FEMALE ADAPTOR

SERIES ASA11

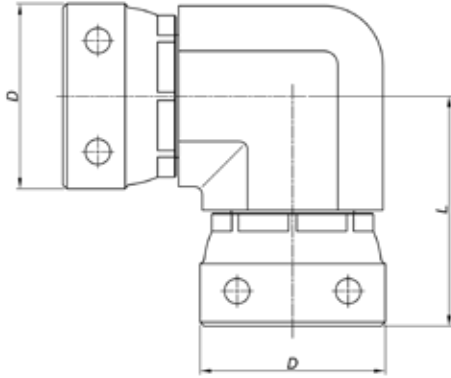


PART REF	NOMINAL BORE						L	D	D1
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASA11-04-04	4	1/4	6	4	1/4	6	62	25	25
ASA11-06-04	6	3/8	10	4	1/4	6	62	32	25
ASA11-06-06	6	3/8	10	6	3/8	10	62	32	32
ASA11-08-04	8	1/2	12	4	1/4	6	65	35	25
ASA11-08-06	8	1/2	12	6	3/8	10	65	35	32
ASA11-08-08	8	1/2	12	8	1/2	12	63	35	35
ASA11-12-06	12	3/4	19	6	3/8	10	65	45	32
ASA11-12-08	12	3/4	19	8	1/2	12	65	45	35
ASA11-12-12	12	3/4	19	12	3/4	19	63	45	45
ASA11-16-06	16	1	25	6	3/8	10	76	60	32
ASA11-16-08	16	1	25	8	1/2	12	76	60	35
ASA11-16-12	16	1	25	12	3/4	19	77	60	45
ASA11-16-16	16	1	25	16	1	25	83	60	60
ASA11-20-08	20	1.1/4	31	8	1/2	12	76	60	35
ASA11-20-12	20	1.1/4	31	12	3/4	19	76	60	45
ASA11-20-16	20	1.1/4	31	16	1	25	83	60	60
ASA11-20-20	20	1.1/4	31	20	1.1/4	31	83	60	60

All dimensions in mm

90° SWIVEL STAPLE FEMALE ADAPTOR

SERIES ASA12



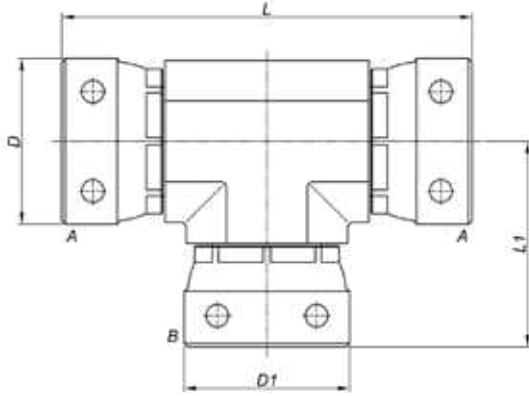
PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASA12-04-04	4	1/4	6	44	25
ASA12-06-06	6	3/8	10	44	32
ASA12-08-08	8	1/2	12	48	35
ASA12-12-12	12	3/4	19	57	45
ASA12-16-16	16	1	25	68	60
ASA12-20-20	20	1.1/4	31	68	60

All dimensions in mm

STAPLE ADAPTORS

T SWIVEL STAPLE FEMALE ADAPTOR

SERIES ASA13

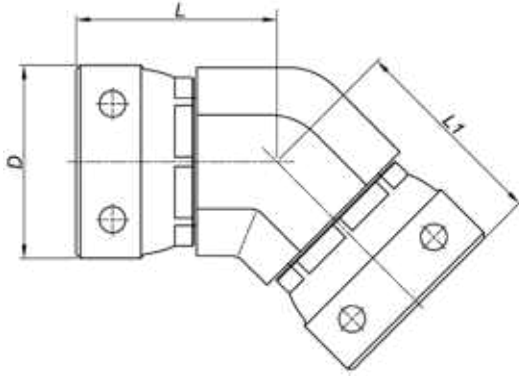


PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASA13-04-04-04	4	1/4	6	4	1/4	6	88	44	25	25
ASA13-06-06-06	6	3/8	10	6	3/8	10	88	44	32	32
ASA13-08-08-06	8	1/2	12	6	3/8	10	96	48	35	32
ASA13-08-08-08	8	1/2	12	8	1/2	12	96	48	35	35
ASA13-08-08-12	8	1/2	12	12	3/4	19	96	57	35	45
ASA13-12-12-06	12	3/4	19	6	3/8	10	114	57	45	32
ASA13-12-12-08	12	3/4	19	8	1/2	12	114	57	45	35
ASA13-12-12-12	12	3/4	19	12	3/4	19	114	57	45	45
ASA13-16-16-06	16	1	25	6	3/8	10	134	60	60	32
ASA13-16-16-08	16	1	25	8	1/2	12	134	60	60	35
ASA13-16-16-12	16	1	25	12	3/4	19	136	64	60	45
ASA13-16-16-16	16	1	25	16	1	25	134	68	60	60
ASA13-20-20-06	20	1.1/4	31	6	3/8	10	134	68	60	32
ASA13-20-20-08	20	1.1/4	31	8	1/2	12	134	68	60	35
ASA13-20-20-12	20	1.1/4	31	12	3/4	19	134	68	60	45
ASA13-20-20-16	20	1.1/4	31	16	1	25	134	72	60	60
ASA13-20-20-20	20	1.1/4	31	20	1.1/4	31	136	68	60	60

All dimensions in mm

135° SWIVEL STAPLE FEMALE ADAPTOR

SERIES ASA15



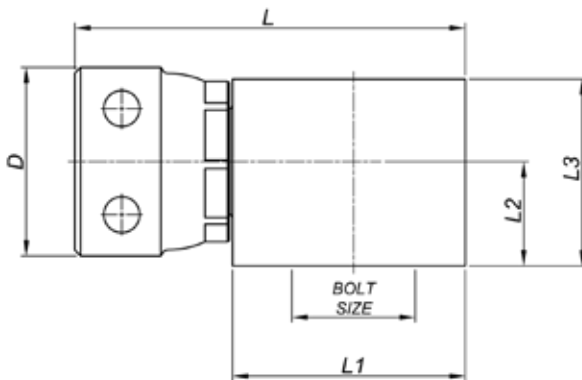
STAPLE
ADAPTORS

A-15

PART REF	NOMINAL BORE			L	L1	D
	DASH	INCH	DN			
ASA15-04-04	4	1/4	6	39	39	25
ASA15-06-06	6	3/8	10	39	39	32
ASA15-08-08	8	1/2	12	40	40	35
ASA15-12-12	12	3/4	19	48	48	45
ASA15-16-16	16	1	25	54	54	60
ASA15-20-20	20	1.1/4	31	54	54	60

STAPLE BANJO

SERIES ASA16



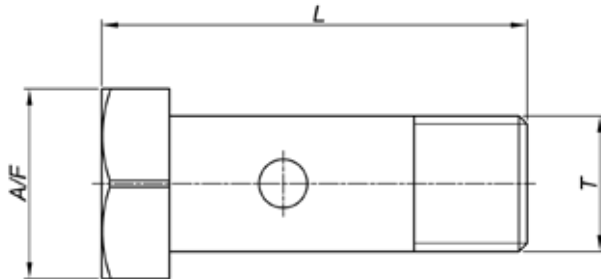
PART REF	BOLT SIZE	NOMINAL BORE			L	L1	L2	L3	D
		DASH	INCH	DN					
ASA16-04-04	1/4" BSP	4	1/4	6	37	26	14	22	25
ASA16-04-06	1/4" BSP	6	3/8	10	37	25	16.5	29	32
ASA16-06-06	3/8" BSP	6	3/8	10	45	34	16.5	29	32
ASA16-06-08	3/8" BSP	8	1/2	12	45	33	17.5	29	35
ASA16-08-06	1/2" BSP	6	3/8	10	51	40	16.5	32	32
ASA16-08-08	1/2" BSP	8	1/2	12	51	40	17.5	32	35
ASA16-12-12	3/4" BSP	12	3/4	19	74	47	24	46	45
ASA16-16-16	1" BSP	16	1	25	93	58	31	55	60

All dimensions in mm

STAPLE ADAPTORS

BANJO BOLT

SERIES ASA16B



PART REF	THREAD (T)	L	ACROSS FLATS (AF)
ASA16B-04	1/4" BSP	36	18
ASA16B-06	3/8" BSP	40	23.5
ASA16B-08	1/2" BSP	50	25.5
ASA16B-12	3/4" BSP	76.5	33
ASA16B-16	1" BSP	91	42

BONDED WASHER

SERIES ASA16W

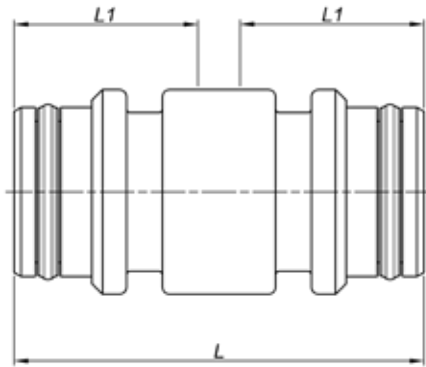


PART REF	BOLT SIZE	L	D
ASA16W - 04	1/4" BSP	2.1	20.6
ASA16W - 06	3/8" BSP	2.1	23.8
ASA16W - 08	1/2" BSP	2.5	28.6
ASA16W - 12	3/4" BSP	2.5	34.9
ASA16W - 16	1" BSP	3.3	42.8
ASA16W - 20	1.1/4" BSP	3.3	52.4
ASA16W - 24	1.1/2" BSP	3.3	58.6
ASA16W - 32	2" BSP	3.3	73.0

All dimensions in mm

EQUAL STRAIGHT MALE STAPLE ADAPTOR

SERIES ASA21



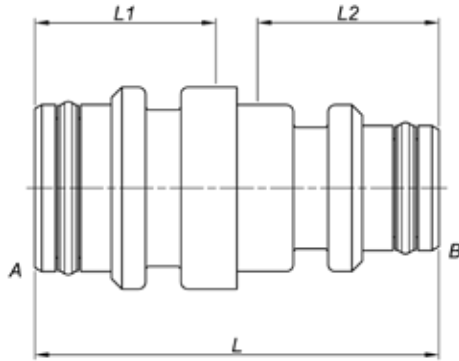
PART REF	NOMINAL BORE			L	L1
	DASH	INCH	DN		
ASA21-04-04	4	1/4	6	58	26
ASA21-06-06	6	3/8	10	58	26
ASA21-08-08	8	1/2	12	58	26
ASA21-12-12	12	3/4	19	58	26
ASA21-16-16	16	1	25	69	32
ASA21-20-20	20	1.1/4	31	69	32
ASA21-24-24	24	1.1/2	38	80	36
ASA21-32-32	32	2	51	80	36
ASA21-40-40	40	2.1/2	63	140	65
ASA21-48-48	48	3	76	150	70

All dimensions in mm

STAPLE ADAPTORS

REDUCING STRAIGHT MALE STAPLE ADAPTOR

SERIES ASA21

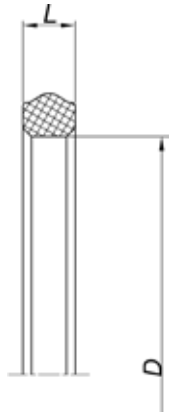


PART REF	NOMINAL BORE						L	L1	L2
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASA21-06-04	6	3/8	10	4	1/4	6	58	26	26
ASA21-08-04	8	1/2	12	4	1/4	6	58	26	26
ASA21-08-06	8	1/2	12	6	3/8	10	58	26	26
ASA21-12-06	12	3/4	19	6	3/8	10	58	26	26
ASA21-12-08	12	3/4	19	8	1/2	12	58	26	26
ASA21-16-06	16	1	25	6	3/8	10	64	32	26
ASA21-16-08	16	1	25	8	1/2	12	64	32	26
ASA21-16-12	16	1	25	12	3/4	19	64	32	26
ASA21-20-06	20	1.1/4	31	6	3/8	10	64	32	26
ASA21-20-08	20	1.1/4	31	8	1/2	12	64	32	26
ASA21-20-12	20	1.1/4	31	12	3/4	19	64	32	26
ASA21-20-16	20	1.1/4	31	16	1	25	70	32	32
ASA21-24-08	24	1.1/2	38	8	1/2	12	70	36	26
ASA21-24-12	24	1.1/2	38	12	3/4	19	70	36	26
ASA21-24-16	24	1.1/2	38	16	1	25	76	36	32
ASA21-24-20	24	1.1/2	38	20	1.1/4	31	76	36	32
ASA21-32-08	32	2	51	8	1/2	12	76	36	26
ASA21-32-12	32	2	51	12	3/4	19	76	36	26
ASA21-32-16	32	2	51	16	1	25	76	36	32
ASA21-32-20	32	2	51	20	1.1/4	31	76	36	32
ASA21-32-24	32	2	51	24	1.1/2	38	80	36	32

All dimensions in mm

SUPA SEAL FOR STANDARD STAPLE ADAPTORS

SERIES ASA28



PART REF	NOMINAL BORE			D	L
	DASH	INCH	DN		
ASA28-04	4	1/4	6	6.5	2.5
ASA28-06	6	3/8	10	10.4	2.5
ASA28-08	8	1/2	12	13.6	2.9
ASA28-12	12	3/4	19	19.5	2.9
ASA28-16	16	1	25	26.5	2.9
ASA28-20	20	1.1/4	31	33.5	2.9
ASA28-24	24	1.1/2	38	41.5	4.2
ASA28-32	32	2	51	50.5	4.2
ASA28-40*	40	2.1/2	63	73.4	2.9
ASA28-48*	48	3	76	80.4	2.9

*On special request only; minimum order quantity will apply

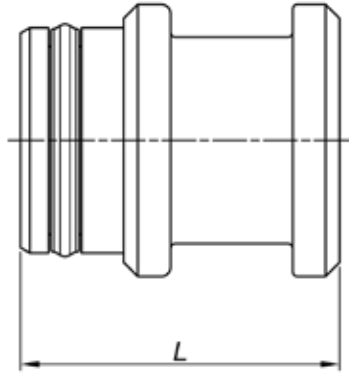
Conventional O-rings and Back-Up rings available on request - Please see pages C-24 to C-27

STAPLE ADAPTORS

STAPLE MALE END PLUG

SERIES ASA29

STAPLE
ADAPTORS
A-20

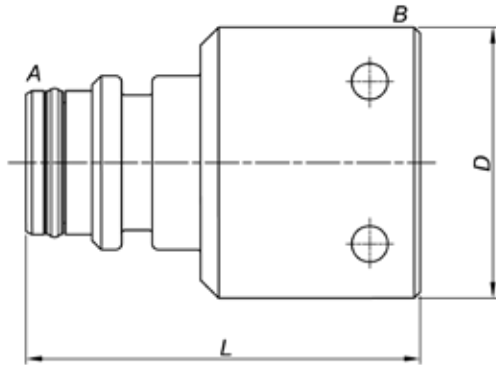


PART REF	NOMINAL BORE			L
	DASH	INCH	DN	
ASA29-04	4	1/4	6	34
ASA29-06	6	3/8	10	34
ASA29-08	8	1/2	12	34
ASA29-12	12	3/4	19	34
ASA29-16	16	1	25	41
ASA29-20	20	1.1/4	31	41
ASA29-24	24	1.1/2	38	47
ASA29-32	32	2	51	47
ASA29-40	40	2.1/2	63	80
ASA29-48	48	3	76	110

All dimensions in mm

STRAIGHT STAPLE MALE - FIXED FEMALE ADAPTOR

SERIES ASA31F



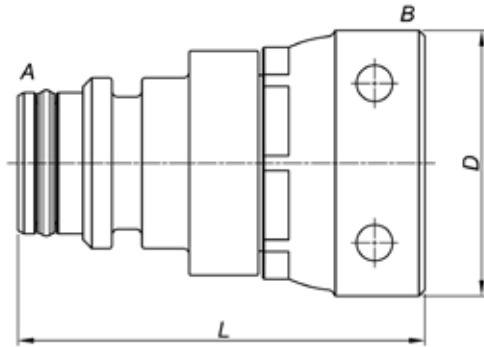
PART REF	NOMINAL BORE						L	D
	SIDE "A"			SIDE "B"				
	DASH	INCH	DN	DASH	INCH	DN		
ASA31F-06-06	6	3/8	10	6	3/8	10	62	32
ASA31F-08-06	8	1/2	12	6	3/8	10	57	32
ASA31F-08-12	8	1/2	12	12	3/4	19	66	45
ASA31F-12-08	12	3/4	19	8	1/2	12	59	35
ASA31F-16-12	16	1	25	12	3/4	19	68	45
ASA31F-20-24	20	1.1/4	31	24	1.1/2	38	85	76
ASA31F-24-24	24	1.1/2	38	24	1.1/2	38	89	76
ASA31F-32-24	32	2	51	24	1.1/2	38	87	76
ASA31F-32-32	32	2	51	32	2	51	91	85

All dimensions in mm

STAPLE ADAPTORS

STRAIGHT STAPLE MALE - SWIVEL FEMALE ADAPTOR

SERIES ASA31

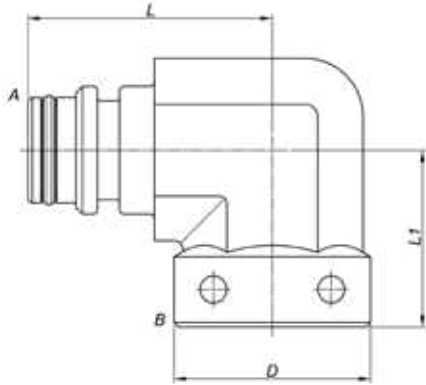


PART REF	NOMINAL BORE						L	D
	SIDE "A"			SIDE "B"				
	DASH	INCH	DN	DASH	INCH	DN		
ASA31-04-04	4	1/4	6	4	1/4	6	69	25
ASA31-04-06	4	1/4	6	6	3/8	10	69	32
ASA31-04-08	4	1/4	6	8	1/2	12	69	35
ASA31-06-04	6	3/8	10	4	1/4	6	69	25
ASA31-06-06	6	3/8	10	6	3/8	10	69	32
ASA31-06-08	6	3/8	10	8	1/2	12	69	35
ASA31-06-12	6	3/8	10	12	3/4	19	69	45
ASA31-08-04	8	1/2	12	4	1/4	6	69	25
ASA31-08-06	8	1/2	12	6	3/8	10	63	32
ASA31-08-08	8	1/2	12	8	1/2	12	64	35
ASA31-08-12	8	1/2	12	12	3/4	19	69	45
ASA31-12-06	12	3/4	19	6	3/8	10	69	32
ASA31-12-08	12	3/4	19	8	1/2	12	69	35
ASA31-12-12	12	3/4	19	12	3/4	19	69	45
ASA31-12-16	12	3/4	19	16	1	25	81	60
ASA31-12-20	12	3/4	19	20	1.1/4	31	83	60
ASA31-16-06	16	1	25	6	3/8	10	76	32
ASA31-16-08	16	1	25	8	1/2	12	76	35
ASA31-16-12	16	1	25	12	3/4	19	76	45
ASA31-16-16	16	1	25	16	1	25	83	60
ASA31-16-20	16	1	25	20	1.1/4	31	83	60
ASA31-20-06	20	1.1/4	31	6	3/8	10	76	32
ASA31-20-08	20	1.1/4	31	8	1/2	12	76	35
ASA31-20-12	20	1.1/4	31	12	3/4	19	79	45
ASA31-20-16	20	1.1/4	31	16	1	25	81	60
ASA31-20-20	20	1.1/4	31	20	1.1/4	31	83	60

All dimensions in mm

90° STAPLE MALE - FIXED FEMALE ADAPTOR

SERIES ASA32F



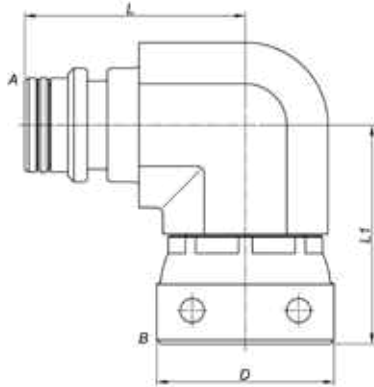
PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASA32F-06-06	6	3/8	10	6	3/8	10	46	32	32
ASA32F-08-08	8	1/2	12	8	1/2	12	51	35	35
ASA32F-12-12	12	3/4	19	12	3/4	19	56	40	45
ASA32F-16-16	16	1	25	16	1	25	66	48	55
ASA32F-20-20	20	1.1/4	31	20	1.1/4	31	68	55	60

All dimensions in mm

STAPLE ADAPTORS

90° STAPLE MALE - SWIVEL FEMALE ADAPTOR SERIES ASA32

STAPLE
ADAPTORS
A-24

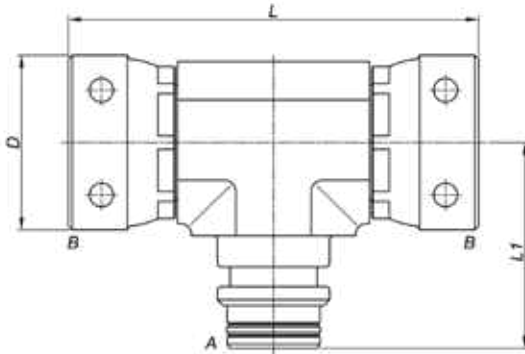


PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASA32-04-04	4	1/4	6	4	1/4	6	46	44	25
ASA32-06-06	6	3/8	10	6	3/8	10	46	44	32
ASA32-06-08	6	3/8	10	8	1/2	12	51	48	35
ASA32-08-06	8	1/2	12	6	3/8	10	51	48	32
ASA32-08-08	8	1/2	12	8	1/2	12	51	48	35
ASA32-12-12	12	3/4	19	12	3/4	19	56	57	45
ASA32-16-16	16	1	25	16	1	25	66	68	60
ASA32-20-20	20	1.1/4	31	20	1.1/4	31	68	68	60

All dimensions in mm

STAPLE MALE - T SWIVEL FEMALE ADAPTOR

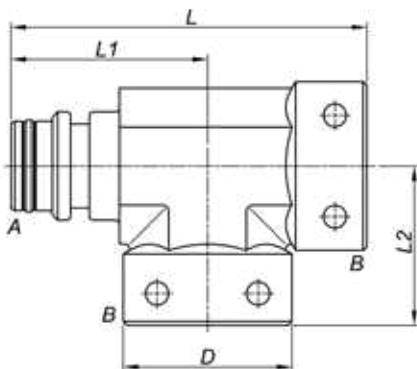
SERIES ASA33



PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASA33-04-04-04	4	1/4	6	4	1/4	6	88	46	25
ASA33-06-06-06	6	3/8	10	6	3/8	10	88	46	32
ASA33-08-08-08	8	1/2	12	8	1/2	12	96	52	35
ASA33-12-12-12	12	3/4	19	12	3/4	19	107	57	45

STAPLE MALE - L FIXED FEMALE ADAPTOR

SERIES ASA34F



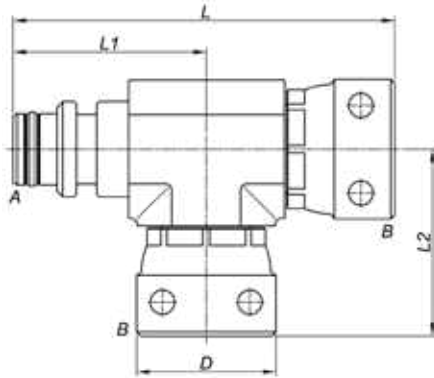
PART REF	NOMINAL BORE						L	L1	L2	D
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASA34F-06-06-06	6	3/8	10	6	3/8	10	85	48	32	32
ASA34F-08-08-08	8	1/2	12	8	1/2	12	93	51	35	35
ASA34F-12-12-12	12	3/4	19	12	3/4	19	96	53	40	45
ASA34F-16-16-16	16	1	25	16	1	25	119	66	48	55

All dimensions in mm

STAPLE ADAPTORS

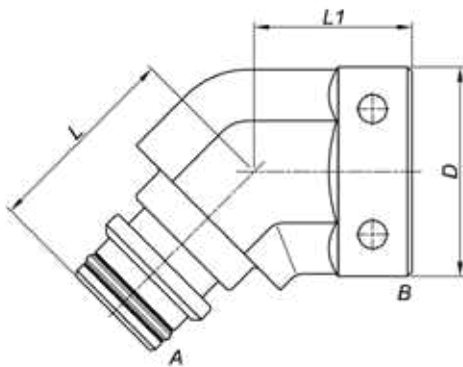
90° STAPLE MALE - L SWIVEL FEMALE ADAPTOR SERIES ASA34

STAPLE ADAPTORS
A-26



PART REF	NOMINAL BORE						L	L1	L2	D
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASA34-04-04-04	4	1/4	6	4	1/4	6	90	46	44	25
ASA34-06-06-06	6	3/8	10	6	3/8	10	90	46	44	32
ASA34-08-08-08	8	1/2	12	8	1/2	12	100	52	48	35
ASA34-12-12-12	12	3/4	19	12	3/4	19	114	57	57	45
ASA34-16-16-16	16	1	25	16	1	25	139	71	68	60

135° STAPLE MALE - FIXED FEMALE ADAPTOR SERIES ASA35F

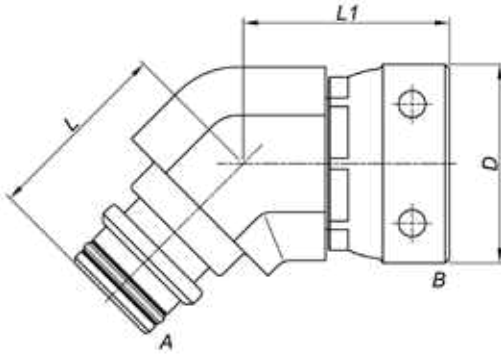


PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASA35F-06-06	6	3/8	10	6	3/8	10	39	31	32
ASA35F-08-08	8	1/2	12	8	1/2	12	39	34	35
ASA35F-12-12	12	3/4	19	12	3/4	19	43	34	45

All dimensions in mm

135° STAPLE MALE - SWIVEL FEMALE ADAPTOR

SERIES ASA35



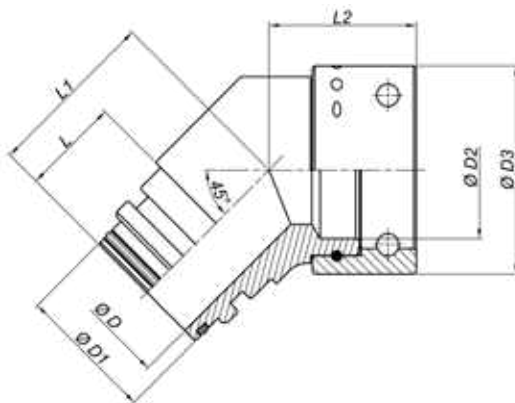
STAPLE
ADAPTORS

A-27

PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASA35-04-04	4	1/4	6	4	1/4	6	40	39	25
ASA35-06-06	6	3/8	10	6	3/8	10	40	39	32
ASA35-08-08	8	1/2	12	8	1/2	12	40	40	35
ASA35-12-12	12	3/4	19	12	3/4	19	43	47	45
ASA35-16-16	16	1	25	16	1	25	52	54	60
ASA35-20-20	20	1.1/4	31	20	1.1/4	31	52	54	60

135° STAPLE MALE - SWIVEL FEMALE

SERIES ASA35

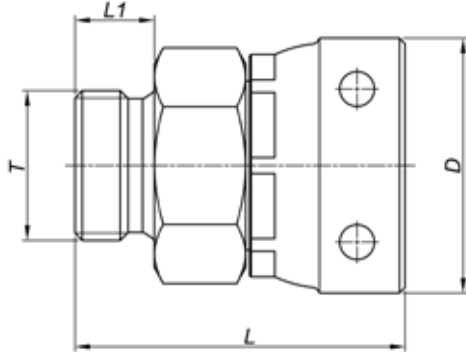


PART REF	NOMINAL BORE			L	L1	L2	D	D1	D2	D3
	DASH	INCH	DN							
ASA35-24-24	24	1.1/2	38	40	66.5	59	35	47	47	76
ASA35-32-32	32	2	51	40	70.5	60.5	44	56	56	85

All dimensions in mm

STAPLE ADAPTORS

BSP MALE FLAT FACE - SWIVEL FEMALE ADAPTOR SERIES ASA40

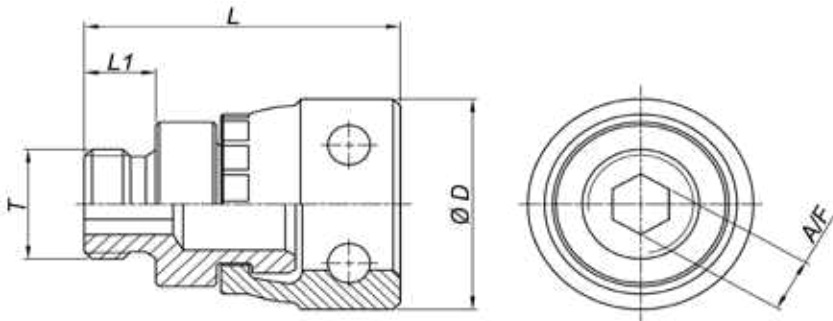


PART REF	THREAD (T)	NOMINAL BORE			L	L1	D	AF
		DASH	INCH	DN				
ASA40-04-04	1/4 " BSP	4	1/4	6	47	10	32	22
ASA40-04-06	1/4 " BSP	6	3/8	10	47	10	32	22
ASA40-06-04	3/8 " BSP	4	1/4	6	47	9	25	22
ASA40-06-06	3/8 " BSP	6	3/8	10	48	10	32	22
ASA40-06-08	3/8 " BSP	8	1/2	12	53	10	35	27
ASA40-08-06	1/2 " BSP	6	3/8	10	54	13	32	27
ASA40-08-08	1/2 " BSP	8	1/2	12	56	13	35	27
ASA40-08-12	1/2 " BSP	12	3/4	19	59	13	45	36
ASA40-12-08	3/4 " BSP	8	1/2	12	59	14	35	36
ASA40-12-12	3/4 " BSP	12	3/4	19	59	14	45	36
ASA40-12-16	3/4 " BSP	16	1	25	63	14	60	46
ASA40-16-08	1" BSP	8	1/2	12	60	17	35	41
ASA40-16-12	1" BSP	12	3/4	19	62	17	45	46
ASA40-16-16	1" BSP	16	1	25	73	17	60	46
ASA40-16-20	1" BSP	20	1.1/4	31	80	17	60	50
ASA40-20-12	1.1/4" BSP	12	3/4	19	63	20	60	50
ASA40-20-16	1.1/4 " BSP	16	1	25	77	19	60	50
ASA40-20-20	1.1/4 " BSP	20	1.1/4	31	74	19	60	50
ASA40-24-20	1.1/2 " BSP	20	1.1/4	31	72	20	60	55
*ASA40F-24-24	1.1/2 " BSP	24	1.1/2	38	76	20	70	70
*ASA40F-32-32	2" BSP	32	2	51	80	23	80	80

* Fixed Female

All dimensions in mm

BSP MALE FLAT FACE - SWIVEL FEMALE - COMPACT SERIES ASA40C



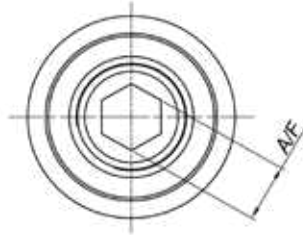
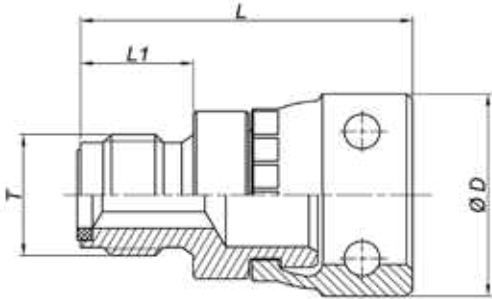
PART REF	THREAD (T)	NOMINAL BORE			L	L1	D	A/F
		DASH	INCH	DN				
ASA40C-06-06	3/8" BSP	6	3/8	10	45	10	32	8
ASA40C-06-08	3/8" BSP	6	3/8	10	47	10	35	8
ASA40C-08-06	1/2" BSP	8	1/2	12	48	13	32	10
ASA40C-08-08	1/2" BSP	8	1/2	12	49	13	35	10
ASA40C-12-08	3/4" BSP	12	3/4	19	50	14	35	14
ASA40C-12-12	3/4" BSP	12	3/4	19	54	16	45	14
ASA40C-16-16	1" BSP	16	1	25	61	16.5	60	19
ASA40C-16-20	1" BSP	16	1	25	60	16.5	60	19

All dimensions in mm

STAPLE ADAPTORS

BSP MALE O-RING - SWIVEL FEMALE - COMPACT SERIES ASA41C

STAPLE
ADAPTORS
A-30

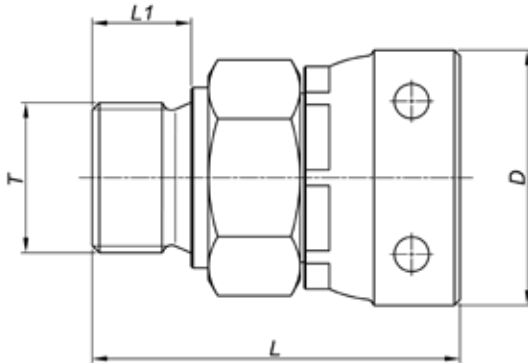


PART REF	THREAD (T)	NOMINAL BORE			L	L1	D	A/F
		DASH	INCH	DN				
ASA41C-08-06	1/2" BSP	6	3/8	10	50	19	32	10
ASA41C-08-08	1/2" BSP	8	1/2	12	56	19	35	10
ASA41C-12-06	3/4" BSP	6	3/8	10	42	16.5	32	10
ASA41C-12-08	3/4" BSP	8	1/2	12	43	16.5	35	10
ASA41C-12-12	3/4" BSP	12	3/4	19	62	24	45	14
ASA41C-16-16	1" BSP	16	1	25	71	25.5	60	19

All dimensions in mm

BSP MALE FORM D - SWIVEL FEMALE ADAPTOR

SERIES ASA42



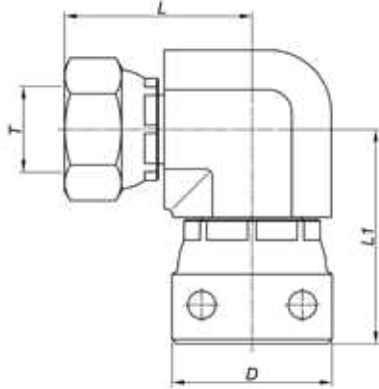
PART REF	THREAD (T)	NOMINAL BORE			L	L1	D	AF
		DASH	INCH	DN				
ASA42-04-04	1/4 " BSP	4	1/4	6	52	12	25	22
ASA42-06-04	3/8 " BSP	4	1/4	6	52	12	25	22
ASA44-06-06	3/8 " BSP	6	3/8	10	52	12	32	24
ASA42-06-08	3/8 " BSP	8	1/2	12	57	12	35	30
ASA42-08-06	1/2 " BSP	6	3/8	10	57	14	32	27
ASA42-08-08	1/2 " BSP	8	1/2	12	57	14	35	30
ASA42-08-12	1/2 " BSP	12	3/4	19	57	14	45	36
ASA42-12-08	3/4 " BSP	8	1/2	12	59	16	35	32
ASA42-12-12	3/4 " BSP	12	3/4	19	59	16	45	36
ASA42-12-16	3/4 " BSP	16	1	25	66	16	60	46
ASA42-16-08	1" BSP	8	1/2	12	61	18	35	41
ASA42-16-12	1" BSP	12	3/4	19	63	18	45	41
ASA42-16-16	1" BSP	16	1	25	68	18	60	46
ASA42-16-20	1" BSP	20	1.1/4	31	68	18	60	50
ASA42-20-16	1.1/4 " BSP	16	1	25	70	20	60	50
ASA42-20-20	1.1/4 " BSP	20	1.1/4	31	70	20	60	50
ASA42-24-20	1.1/2 " BSP	20	1.1/4	31	72	22	60	55

All dimensions in mm

STAPLE ADAPTORS

90° BSP FEMALE 60° CONE - SWIVEL FEMALE ADAPTOR

SERIES ASA44

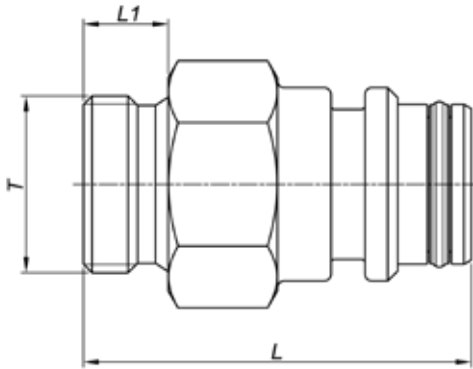


PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
ASA44-04-04	1/4 " BSP	4	1/4	6	43	44	25
ASA44-06-06	3/8 " BSP	6	3/8	10	42	48	32
ASA44-08-08	1/2 " BSP	8	1/2	12	45	48	35

All dimensions in mm

BSP MALE FLAT FACE - STAPLE MALE ADAPTOR

SERIES ASA46



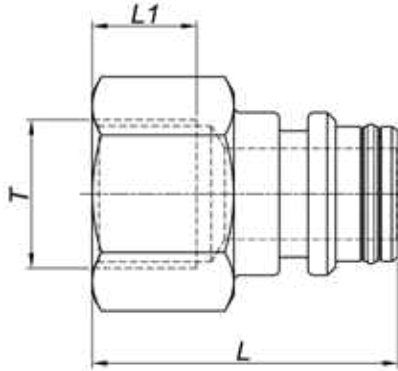
PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASA46-04-04	1/4 " BSP	4	1/4	6	51	9	19
ASA46-04-06	1/4 " BSP	6	3/8	10	51	9	22
ASA46-06-04	3/8 " BSP	4	1/4	6	51	10	22
ASA46-06-06	3/8 " BSP	6	3/8	10	51	10	22
ASA46-06-08	3/8 " BSP	8	1/2	12	50	10	27
ASA46-08-06	1/2 " BSP	6	3/8	10	50	13	27
ASA46-08-08	1/2 " BSP	8	1/2	12	55	13	27
ASA46-12-08	3/4 " BSP	8	1/2	12	58	14	32
ASA46-12-12	3/4 " BSP	12	3/4	19	58	14	32
ASA46-12-16	3/4 " BSP	16	1	25	72	14	46
ASA46-16-08	1" BSP	8	1/2	12	62	17	41
ASA46-16-16	1" BSP	16	1	25	72	17	46
ASA46-20-16	1.1/4 " BSP	16	1	25	79	19	50
ASA46-20-20	1.1/4 " BSP	20	1.1/4	31	79	19	50
ASA46-24-24	1.1/2 " BSP	24	1.1/2	38	82	23	60
ASA46-32-32	2" BSP	32	2	51	82	23	70

All dimensions in mm

STAPLE ADAPTORS

BSP FIXED FEMALE - STAPLE MALE ADAPTOR

SERIES ASA48

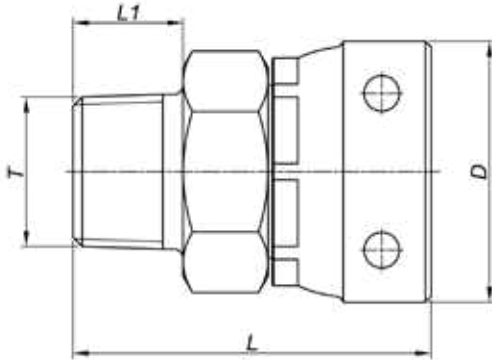


PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASA48-04-04	1/4 " BSP	4	1/4	6	51	13	21
ASA48-06-06	3/8 " BSP	6	3/8	10	54	13	24
ASA48-08-06	1/2 " BSP	6	3/8	10	55	17	30
ASA48-08-08	1/2 " BSP	8	1/2	12	54	17	30

All dimensions in mm

NPTF MALE - SWIVEL FEMALE ADAPTOR

SERIES ASA50



PART REF	THREAD (T)	NOMINAL BORE			L	L1	D	AF
		DASH	INCH	DN				
ASA50-02-04	1/8 " NPTF	4	1/4	6	47	10	25	19
ASA50-04-04	1/4 " NPTF	4	1/4	6	52	15	25	19
ASA50-04-06	1/4 " NPTF	6	3/8	10	52	15	32	22
ASA50-06-04	3/8 " NPTF	4	1/4	6	55	15	25	19
ASA50-06-06	3/8 " NPTF	6	3/8	10	52	15	32	22
ASA50-06-08	3/8 " NPTF	8	1/2	12	56	15	35	27
ASA50-08-06	1/2 " NPTF	6	3/8	10	57	19	32	22
ASA50-08-08	1/2 " NPTF	8	1/2	12	60	19	35	27
ASA50-08-12	1/2 " NPTF	12	3/4	19	62	19	45	36
ASA50-12-08	3/4 " NPTF	8	1/2	12	60	19	35	30
ASA50-12-12	3/4 " NPTF	12	3/4	19	63	19	45	36
ASA50-12-16	3/4 " NPTF	16	1	25	76	19	60	46
ASA50-16-12	1" NPTF	12	3/4	19	65	24	45	36
ASA50-16-16	1" NPTF	16	1	25	81	24	60	46
ASA50-16-20	1" NPTF	20	1.1/4	31	81	24	60	50
ASA50-20-16	1.1/4 " NPTF	16	1	25	82	25	60	46
ASA50-20-20	1.1/4 " NPTF	20	1.1/4	31	82	25	60	50
*ASA50F-24-24	1.1/2 " NPTF	24	1.1/2	38	80	26	76	70
*ASA50F-32-32	2" NPTF	32	2	51	80	26	85	75

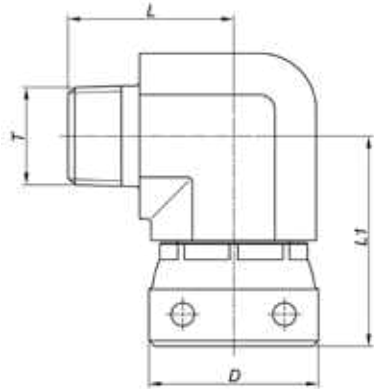
* Fixed Female

All dimensions in mm

STAPLE ADAPTORS

90° NPTF MALE - SWIVEL FEMALE ADAPTOR

SERIES ASA52



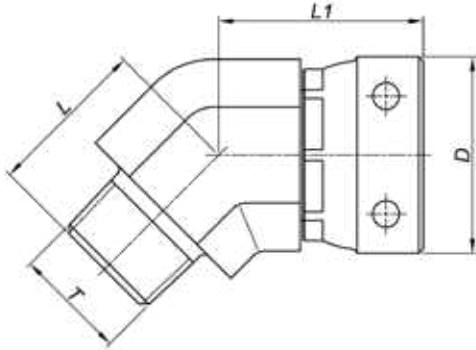
PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
ASA52-02-04	1/8 " NPTF	4	1/4	6	31	44	25
ASA52-04-04	1/4 " NPTF	4	1/4	6	31	44	25
ASA52-04-06	1/4 " NPTF	6	3/8	10	34	44	32
ASA52-06-04	3/8 " NPTF	4	1/4	6	31	44	25
ASA52-06-06	3/8 " NPTF	6	3/8	10	34	44	32
ASA52-06-08	3/8 " NPTF	8	1/2	12	34	48	35
ASA52-08-06	1/2 " NPTF	6	3/8	10	36	44	32
ASA52-08-08	1/2 " NPTF	8	1/2	12	40	48	35
ASA52-08-12	1/2 " NPTF	12	3/4	19	44	57	45
ASA52-12-08	3/4 " NPTF	8	1/2	12	40	48	35
ASA52-12-12	3/4 " NPTF	12	3/4	19	44	57	45
ASA52-12-16	3/4 " NPTF	16	1	25	46	67	60
ASA52-16-12	1 " NPTF	12	3/4	19	48	58	45
ASA52-16-16	1 " NPTF	16	1	25	58	67	60
ASA52-20-20	1.1/4 " NPTF	20	1.1/4	31	66	67	60
*ASA52F-24-24	1.1/2 " NPTF	24	1.1/2	38	80	81	76
*ASA52F-32-32	2" NPTF	32	2	51	102	102	85

* Fixed Female

All dimensions in mm

135° NPTF MALE - SWIVEL FEMALE ADAPTOR

SERIES ASA55



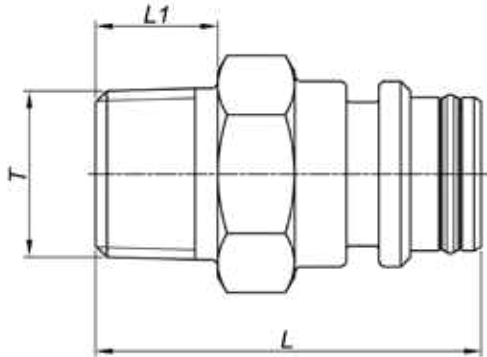
PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
ASA55-04-04	1/4 " NPTF	4	1/4	6	28	39	25
ASA55-06-06	3/8 " NPTF	6	3/8	10	29	39	32
ASA55-08-08	1/2 " NPTF	8	1/2	12	31	40	35
ASA55-12-12	3/4 " NPTF	12	3/4	19	38	48	45
ASA55-16-16	1 " NPTF	16	1	25	49	54	60
ASA55-20-20	1.1/4 " NPTF	20	1.1/4	31	50	48	60

All dimensions in mm

STAPLE ADAPTORS

NPTF MALE - STAPLE MALE ADAPTOR

SERIES ASA56

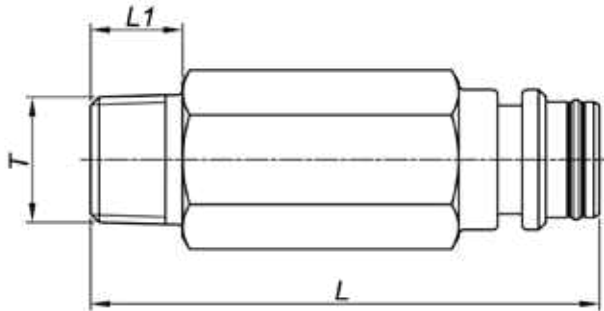


PART REF	THREAD (T)	NOMINAL BORE			L	L1	A/F
		DASH	INCH	DN			
ASA56-02-04	1/8 " NPTF	4	1/4	6	53	10	19
ASA56-04-04	1/4 " NPTF	4	1/4	6	53	14	19
ASA56-04-06	1/4 " NPTF	6	3/8	10	53	14	22
ASA56-06-04	3/8 " NPTF	4	1/4	6	53	14	19
ASA56-06-06	3/8 " NPTF	6	3/8	10	53	14	22
ASA56-06-08	3/8 " NPTF	8	1/2	12	53	14	27
ASA56-08-06	1/2 " NPTF	6	3/8	10	58	19	22
ASA56-08-08	1/2 " NPTF	8	1/2	12	58	19	27
ASA56-08-12	1/2 " NPTF	12	3/4	19	60	19	32
ASA56-12-08	3/4 " NPTF	8	1/2	12	60	19	30
ASA56-12-12	3/4 " NPTF	12	3/4	19	60	19	32
ASA56-12-16	3/4 " NPTF	16	1	25	74	19	41
ASA56-16-12	1 " NPTF	12	3/4	19	68	24	36
ASA56-16-16	1 " NPTF	16	1	25	78	24	41
ASA56-20-20	1.1/4 " NPTF	20	1.1/4	31	79	25	50
ASA56-24-24	1.1/2 " NPTF	24	1.1/2	38	82	27	60
ASA56-32-32	2" NPTF	32	2	51	82	27	70

All dimensions in mm

NPTF MALE LONG - STAPLE MALE ADAPTOR

SERIES ASA56L

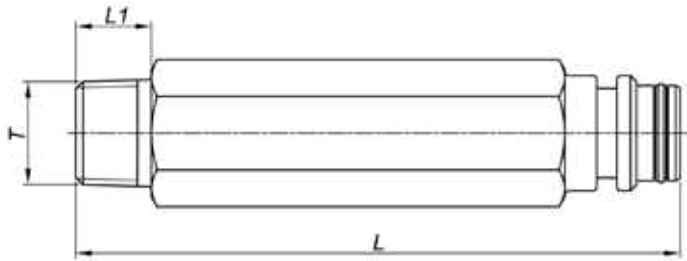


PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASA56L-02-04	1/8 " NPTF	4	1/4	6	90	10	19
ASA56L-04-04	1/4 " NPTF	4	1/4	6	88	14	19
ASA56L-04-06	1/4 " NPTF	6	3/8	10	98	14	22
ASA56L-06-06	3/8 " NPTF	6	3/8	10	100	15	22
ASA56L-06-08	3/8 " NPTF	8	1/2	12	102	15	27
ASA56L-08-06	1/2 " NPTF	6	3/8	10	98	19	22
ASA56L-08-08	1/2 " NPTF	8	1/2	12	100	19	27
ASA56L-12-12	3/4 " NPTF	12	3/4	19	105	19	32
ASA56L-16-16	1 " NPTF	16	1	25	133	24	41

All dimensions in mm

STAPLE ADAPTORS

NPTF MALE EXTRA LONG - STAPLE MALE ADAPTOR SERIES ASA56XL

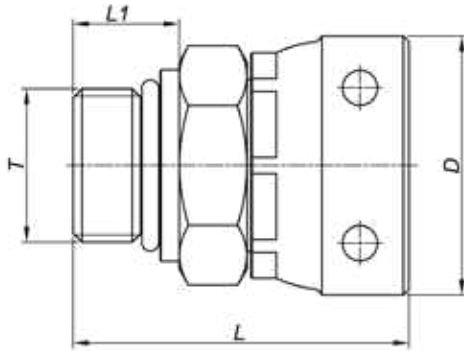


PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASA56XL-04-04	1/4 " NPTF	4	1/4	6	125	14	19
ASA56XL-06-06	3/8 " NPTF	6	3/8	10	125	14	22
ASA56XL-06-08	3/8 " NPTF	8	1/2	12	145	14	27
ASA56XL-08-06	1/2 " NPTF	6	3/8	10	125	19	22
ASA56XL-08-08	1/2 " NPTF	8	1/2	12	144	19	27
ASA56XL-12-12	3/4 " NPTF	12	3/4	19	152	19	32
ASA56XL-16-16	1 " NPTF	16	1	25	198	24	41
ASA56XL-20-20	1.1/4 " NPTF	20	1.1/4	31	212	25	50

All dimensions in mm

UNF MALE 'O' RING - SWIVEL FEMALE ADAPTOR

SERIES ASA60



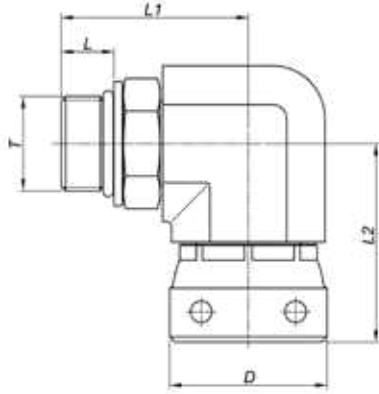
PART REF	THREAD (T)	NOMINAL BORE			L	L1	D	AF
		DASH	INCH	DN				
ASA60-04-04	7/16 " 20 UNF	4	1/4	6	50	11	25	19
ASA60-04-06	7/16 " 20 UNF	6	3/8	10	50	11	32	22
ASA60-05-04	1/2 " 20 UNF	4	1/4	6	50	11	25	19
ASA60-06-04	9/16 " 18 UNF	4	1/4	6	50	12	25	19
ASA60-06-06	9/16 " 18 UNF	6	3/8	10	50	12	32	22
ASA60-06-08	9/16 " 18 UNF	8	1/2	12	54	12	35	27
ASA60-08-06	3/4 " 16 UNF	6	3/8	10	55	14	32	27
ASA60-08-08	3/4 " 16 UNF	8	1/2	12	56	14	35	27
ASA60-08-12	3/4 " 16 UNF	12	3/4	19	59	14	45	36
ASA60-10-08	7/8 " 14 UNF	8	1/2	12	59	16	35	27
ASA60-10-12	7/8 " 14 UNF	12	3/4	19	59	16	45	36
ASA60-12-08	1.1/6 " 12 UNF	8	1/2	12	59	18	35	36
ASA60-12-12	1.1/6 " 12 UNF	12	3/4	19	59	18	45	36
ASA60-12-16	1.1/6 " 12 UNF	16	1	25	76	18	60	46
ASA60-16-12	1.5/16 " 12 UNF	12	3/4	19	59	19	45	41
ASA60-16-16	1.5/16 " 12 UNF	16	1	25	76	19	60	46
ASA60-16-20	1.5/16 " 12 UNF	20	1.1/4	31	73	19	60	46
ASA60-20-12	1.5/8 " 12 UNF	12	3/4	19	59	19	45	50
ASA60-20-20	1.5/8 " 12 UNF	20	1.1/4	31	73	19	60	50

All dimensions in mm

STAPLE ADAPTORS

90° UNF MALE 'O' RING - SWIVEL FEMALE ADAPTOR SERIES ASA62

STAPLE ADAPTORS
A-42

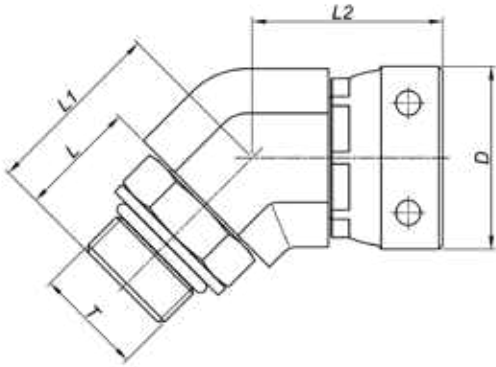


PART REF	THREAD (T)	NOMINAL BORE			L	L1	L2	D
		DASH	INCH	DN				
ASA62-04-04	7/16 " 20 UNF	4	1/4	6	10	32	44	25
ASA62-04-06	7/16 " 20 UNF	6	3/8	10	10	37	44	32
ASA62-06-04	9/16 " 18 UNF	4	1/4	6	12	38	44	25
ASA62-06-06	9/16 " 18 UNF	6	3/8	10	12	38	44	32
ASA62-06-08	9/16 " 18 UNF	8	1/2	12	12	45	48	35
ASA62-08-06	3/4 " 16 UNF	6	3/8	10	13	45	48	32
ASA62-08-08	3/4 " 16 UNF	8	1/2	12	13	46	48	35
ASA62-10-08	7/8 " 14 UNF	8	1/2	12	15	45	51	35
ASA62-10-12	7/8 " 14 UNF	12	3/4	19	15	54	57	45
ASA62-12-08	1.1/6 " 12 UNF	8	1/2	12	18	54	57	35
ASA62-12-12	1.1/6 " 12 UNF	12	3/4	19	18	54	57	45
ASA62-16-16	1.5/16 " 12 UNF	16	1	25	18	65	68	60
ASA62-20-20	1.5/8 " 12 UNF	20	1.1/4	31	18	65	68	60

All dimensions in mm

135° UNF MALE 'O' RING - SWIVEL FEMALE ADAPTOR

SERIES ASA65



PART REF	THREAD (T)	NOMINAL BORE			L	L1	L2	D
		DASH	INCH	DN				
ASA65-04-04	7/16 " 20 UNF	4	1/4	6	10	32	40	25
ASA65-04-06	7/16 " 20 UNF	6	3/8	10	10	34	40	32
ASA65-06-04	9/16 " 18 UNF	4	1/4	6	12	34	40	25
ASA65-06-06	9/16 " 18 UNF	6	3/8	10	12	34	40	32
ASA65-06-08	9/16 " 18 UNF	8	1/2	12	12	45	40	35
ASA65-08-06	3/4 " 16 UNF	6	3/8	10	13	46	40	32
ASA65-08-08	3/4 " 16 UNF	8	1/2	12	13	46	40	35
ASA65-10-08	7/8 " 14 UNF	8	1/2	12	15	41	40	35
ASA65-12-08	1.1/6 " 12 UNF	8	1/2	12	18	45	40	35
ASA65-12-12	1.1/6 " 12 UNF	12	3/4	19	18	45	40	45
ASA65-16-16	1.5/16 " 12 UNF	16	1	25	18	51	51	60
ASA65-20-20	1.5/8 " 12 UNF	20	1.1/4	31	18	51	51	60

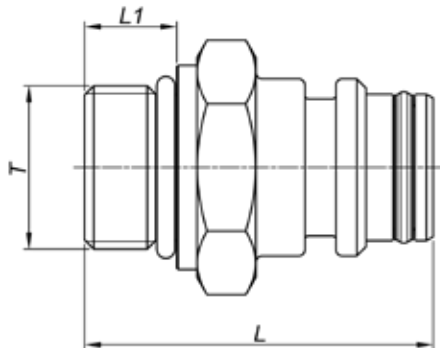
All dimensions in mm

STAPLE ADAPTORS

UNF MALE 'O' RING - STAPLE MALE ADAPTOR

SERIES ASA66

STAPLE
ADAPTORS
A-44

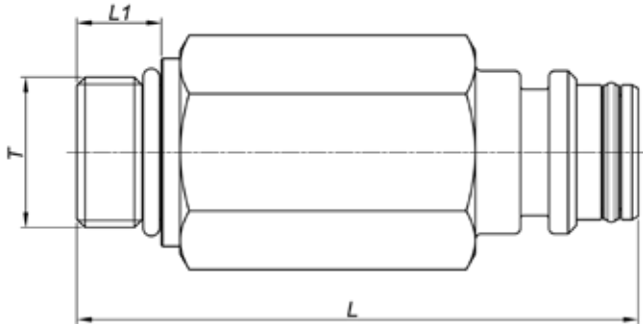


PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASA66-04-04	7/16 " 20 UNF	4	1/4	6	50	14	19
ASA66-04-06	7/16" 20 UNF	6	3/8	10	50	14	22
ASA66-05-04	1/2 " 20 UNF	4	1/4	6	52	14	19
ASA66-06-04	9/16 " 18 UNF	4	1/4	6	52	14	19
ASA66-06-06	9/16 " 18 UNF	6	3/8	10	52	14	22
ASA66-06-08	9/16 "18 UNF	8	1/2	12	56	14	27
ASA66-08-06	3/4 " 16 UNF	6	3/8	10	53	15	22
ASA66-08-08	3/4 " 16 UNF	8	1/2	12	53	15	27
ASA66-08-12	3/4 " 16 UNF	12	3/4	19	55	15	32
ASA66-10-06	7/8 " 14 UNF	6	3/8	10	55	17	27
ASA66-10-08	7/8 " 14 UNF	8	1/2	12	56	17	27
ASA66-10-12	7/8 " 14 UNF	12	3/4	19	55	17	32
ASA66-12-08	1.1/6 " 12 UNF	8	1/2	12	57	19	36
ASA66-12-12	1.1/6 " 12 UNF	12	3/4	19	57	19	36
ASA66-16-12	1.5/16 " 12 UNF	12	3/4	19	60	20	41
ASA66-16-16	1.5/16" 12 UNF	16	1	25	73	20	41
ASA66-20-20	1.5/8 " 12 UNF	20	1.1/4	31	73	20	50

All dimensions in mm

UNF MALE 'O' RING LONG - STAPLE MALE ADAPTOR

SERIES ASA66L



STAPLE
ADAPTORS

A-45

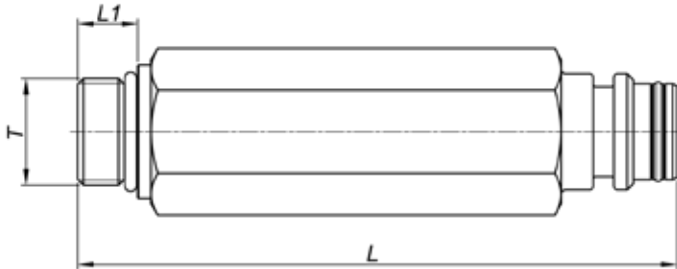
PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASA66L-04-04	7/16 " 20 UNF	4	1/4	6	85	14	19
ASA66L-06-04	9/16" 18 UNF	4	1/4	6	85	14	19
ASA66L-06-06	9/16 " 18 UNF	6	3/8	10	95	14	22
ASA66L-08-06	3/4 " 16 UNF	6	3/8	10	95	15	22
ASA66L-08-08	3/4 " 16 UNF	8	1/2	12	95	15	27
ASA66L-10-08	7/8 " 14 UNF	8	1/2	12	95	17	27
ASA66L-12-08	1.1/6 " 12 UNF	8	1/2	12	95	19	27
ASA66L-12-12	1.1/6 " 12 UNF	12	3/4	19	100	19	36
ASA66L-16-16	1.5/16" 12 UNF	16	1	25	130	21	41
ASA66L-20-20	1.5/8 " 12 UNF	20	1.1/4	31	140	21	50

All dimensions in mm

STAPLE ADAPTORS

UNF MALE 'O' RING EXTRA LONG - STAPLE MALE ADAPTOR

SERIES ASA66XL



PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASA66XL-04-04	7/16 " 20 UNF	4	1/4	6	122	14	19
ASA66XL-06-04	9/16 " 18 UNF	4	1/4	6	122	14	19
ASA66XL-06-06	9/16 " 18 UNF	6	3/8	10	122	14	22
ASA66XL-08-06	3/4 " 16 UNF	6	3/8	10	122	15	22
ASA66XL-08-08	3/4 " 16 UNF	8	1/2	12	140	15	27
ASA66XL-10-08	7/8 " 14 UNF	8	1/2	12	140	17	27
ASA66XL-12-12	1.1/6 " 12 UNF	12	3/4	19	150	19	36

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

ASH Series Staple Adaptors

The constant demands of the mining industry to increase production output, resulted in the need for large bore, high pressure supply lines. The success of the staple adaptor design was enhanced to provide a range of high-performance staple adaptors to satisfy the pressure requirements.

The ASH series is available in various configurations from sizes DN12 (½") to DN50 (2").



HIGH PRESSURE
STAPLE ADAPTORS

B-I

HIGH PRESSURE STAPLE ADAPTORS

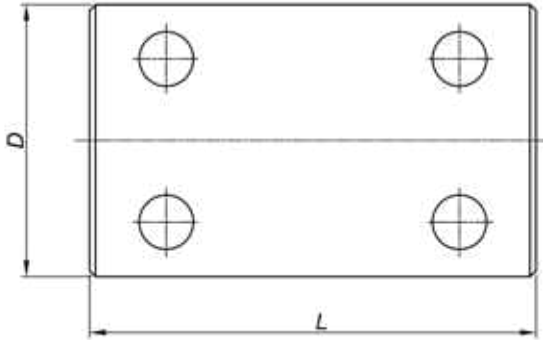
HIGH PRESSURE
STAPLE ADAPTORS

B-II

HIGH PRESSURE STAPLE ADAPTORS

STRAIGHT STAPLE FEMALE ADAPTOR

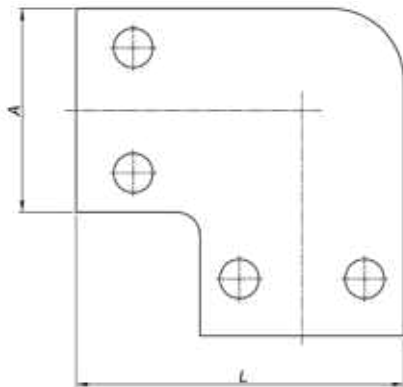
SERIES ASH01



PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASH01-12-12	12	3/4	19	74	45
ASH01-16-16	16	1	25	104	60
ASH01-20-20	20	1.1/4	31	106	70
ASH01-24-24	24	1.1/2	38	117	80
ASH01-32-32	32	2	51	117	90

90° STAPLE FEMALE ADAPTOR

SERIES ASH02



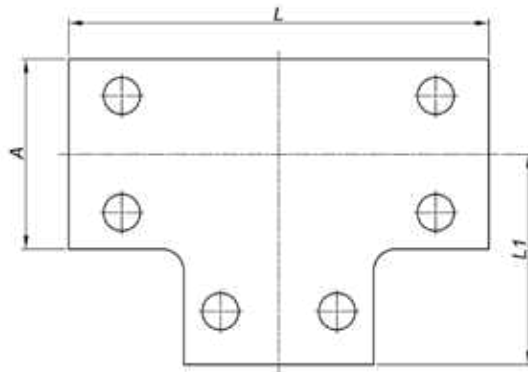
PART REF	NOMINAL BORE			L	A
	DASH	INCH	DN		
ASH02-16-16	16	1	25	101	60
ASH02-20-20	20	1.1/4	31	78	70
ASH02-24-24	24	1.1/2	38	83	80
ASH02-32-32	32	2	51	88	90

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

T PIECE STAPLE FEMALE ADAPTOR

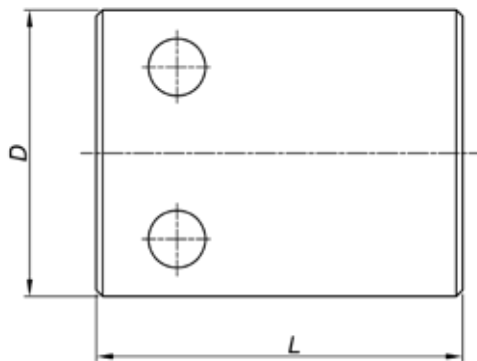
SERIES ASH03



PART REF	NOMINAL BORE			L	L1	A
	DASH	INCH	DN			
ASH03-16-16-16	16	1	25	142	71	60
ASH03-20-20-20	20	1.1/4	31	156	78	70
ASH03-24-24-24	24	1.1/2	38	166	83	80
ASH03-32-32-32	32	2	51	176	88	90

STAPLE END CAP

SERIES ASH06



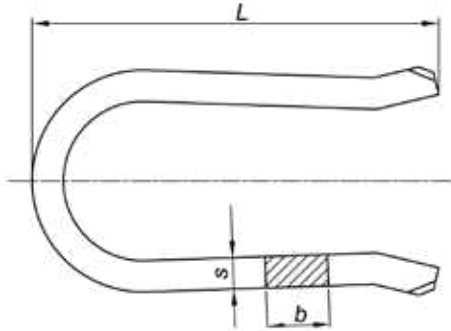
PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASH06-12	12	3/4	19	70	45
ASH06-16	16	1	25	90	60
ASH06-20	20	1.1/4	31	90	70
ASH06-24	24	1.1/2	38	100	80
ASH06-32	32	2	51	112	90

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

STANDARD ASH STAINLESS STAPLE

SERIES ASH08



PART REF	NOMINAL BORE			s	b	L
	DASH	INCH	DN			
ASH08-12	12	3/4	19	4	8	56
ASH08-16	16	1	25	6	12	78
ASH08-20	20	1.1/4	31	6	12	84
ASH08-24	24	1.1/2	38	6	12	99
*ASH08-24L	24	1.1/2	38	6	12	112
ASH08-32	32	2	51	6	12	105
*ASH08-32L	32	2	51	6	12	129

*Longer length

HIGH PRESSURE
STAPLE ADAPTORS

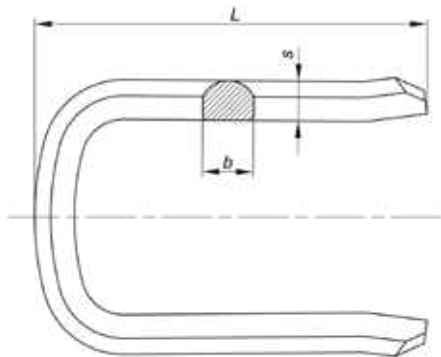
B-3

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

ASH 'D' SECTION STAINLESS STAPLE

SERIES ASH08D

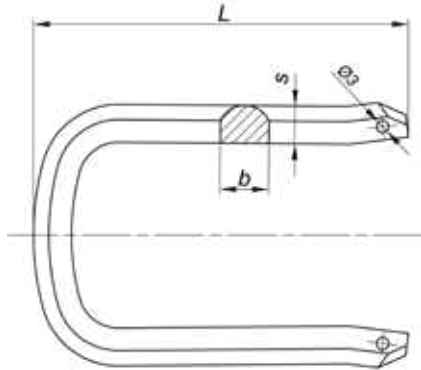


PART REF	NOMINAL BORE			s	b	L
	DASH	INCH	DN			
ASH08D-08	08	1/2	12	6.5	8	53
ASH08D-12	12	3/4	19	6.5	8	60
ASH08D-16	16	1	25	9.4	12	75
ASH08D-20	20	1.1/4	31	9.4	12	85
ASH08D-24	24	1.1/2	38	9.4	12	92
ASH08D-32	32	2	51	9.4	12	103

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

ASH DRILLED HOLES STAINLESS D STAPLE SERIES ASH08D-DH



PART REF	NOMINAL BORE			s	b	L
	DASH	INCH	DN			
ASH08D-08-DH	8	1/2	12	6.5	8	53
ASH08D-12-DH	12	3/4	19	6.5	8	60
ASH08D-12-61-DH	12	3/4	19	6.5	8	61
ASH08D-16-DH	16	1	25	9.4	12	75
ASH08D-16-90-DH	16	1	25	9.4	12	90
ASH08D-16-115-DH	16	1	25	9.4	12	115
ASH08D-20-DH	20	1.1/4	31	9.4	12	85
ASH08D-24-DH	24	1.1/2	38	9.4	12	92
ASH08D-24-100-DH	24	1.1/2	38	9.4	12	100
ASH08D-32-DH	32	2	51	9.4	12	103
ASH08D-32-115-DH	32	2	51	9.4	12	115
ASH08D-32-130-DH	32	2	51	9.4	12	130

HIGH PRESSURE
STAPLE ADAPTORS

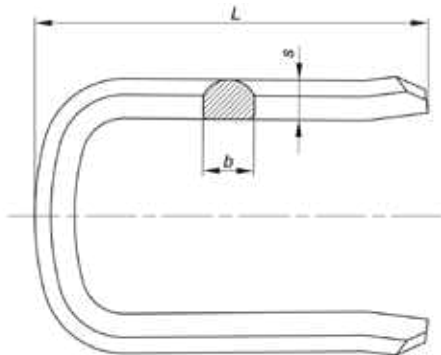
B-5

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

ASH EXTRA LONG STAINLESS D STAPLE

SERIES ASH08D



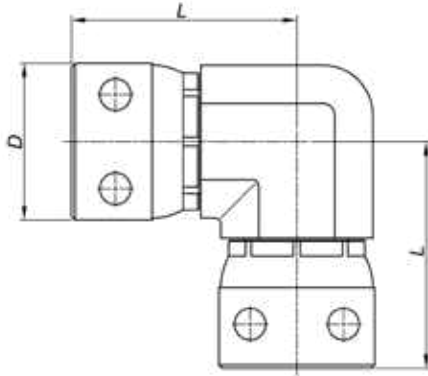
PART REF	NOMINAL BORE			s	b	L
	DASH	INCH	DN			
ASH08D-08-83	8	1/2	12	6.5	8	83
ASH08D-08-90	8	1/2	12	6.5	8	90
ASH08D-08-100	8	1/2	12	6.5	8	100
ASH08D-12-65	12	3/4	19	6.5	8	65
ASH08D-12-67	12	3/4	19	6.5	8	67
ASH08D-12-70	12	3/4	19	6.5	8	70
ASH08D-12-81	12	3/4	19	6.5	8	81
ASH08D-12-100	12	3/4	19	6.5	8	100
ASH08D-12-114	12	3/4	19	6.5	8	114
ASH08D-16-88	16	1	25	9.4	12	88
ASH08D-16-92	16	1	25	9.4	12	92
ASH08D-16-95	16	1	25	9.4	12	95
ASH08D-20-100	20	1.1/4	31	9.4	12	100
ASH08D-24-100	24	1.1/2	38	9.4	12	100
ASH08D-24-115	24	1.1/2	38	9.4	12	115
ASH08D-24-118	24	1.1/2	38	9.4	12	118
ASH08D-24-130	24	1.1/2	38	9.4	12	130
ASH08D-24-134	24	1.1/2	38	9.4	12	134

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

90° SWIVEL STAPLE FEMALE ADAPTOR

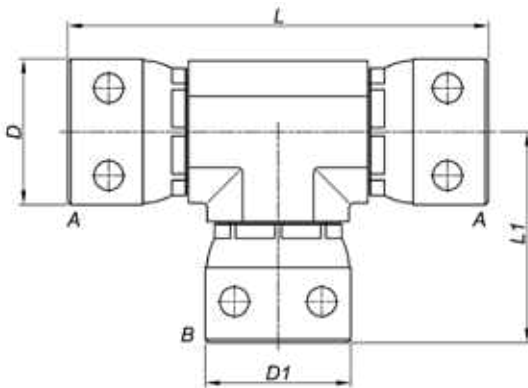
SERIES ASH12



PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASH12-12-12	12	3/4	19	66	45

T SWIVEL STAPLE FEMALE ADAPTOR

SERIES ASH13



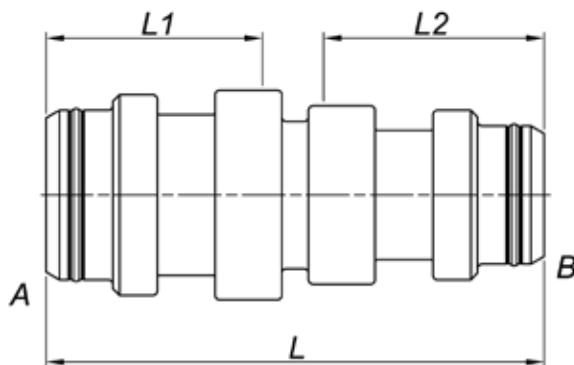
PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASH13-12-12-12	12	3/4	20	12	3/4	19	132	66	45	45
ASH13-12-12-SA08	12	3/4	20	8	1/2	12	132	56	45	35

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

STRAIGHT MALE STAPLE ADAPTOR

SERIES ASH21



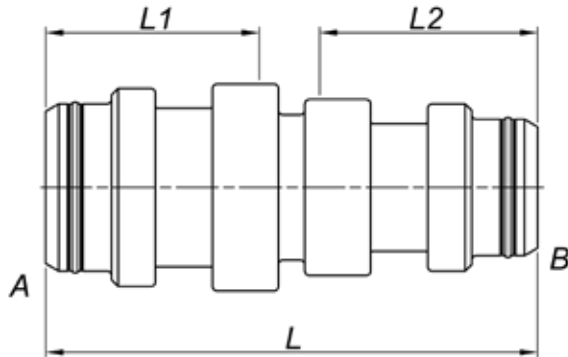
PART REF	NOMINAL BORE						L	L1	L2
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASH21-12-12	12	3/4	20	12	3/4	19	81	36	36
ASH21-16-12	16	1	25	12	3/4	19	91	51	36
ASH21-16-16	16	1	25	16	1	25	110	51	51
ASH21-20-16	20	1.1/4	32	16	1	25	112	52	51
ASH21-20-20	20	1.1/4	32	20	1.1/4	31	110	52	52
ASH21-24-20	24	1.1/2	40	20	1.1/4	31	110	56	52
ASH21-24-24	24	1.1/2	40	24	1.1/2	38	124	56	56
ASH21-32-20	32	2	50	20	1.1/4	31	110	58	52
ASH21-32-24	32	2	50	24	1.1/2	38	124	58	56
ASH21-32-32	32	2	50	32	2	51	124	58	58

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

STRAIGHT MALE - STD. STAPLE MALE ADAPTOR

SERIES ASH21-XX-SAXX



PART REF	NOMINAL BORE						L	L1	L2
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASH21-12-SA08	12	3/4	19	8	1/2	12	67	36	28
ASH21-12-SA12	12	3/4	19	12	3/4	19	73	36	28
ASH21-16-SA12	16	1	25	12	3/4	19	82	51	28
ASH21-16-SA16	16	1	25	16	1	25	93	51	32
ASH21-20-SA08	20	1.1/4	31	8	1/2	12	82	52	28
ASH21-20-SA12	20	1.1/4	31	12	3/4	21	82	52	28
ASH21-20-SA16	20	1.1/4	31	16	1	25	88	52	32
ASH21-20-SA20	20	1.1/4	31	20	1.1/4	31	94	52	32
ASH21-24-SA12	24	1.1/2	38	12	3/4	19	88	57	28
ASH21-24-SA16	24	1.1/2	38	16	1	25	92	57	32
ASH21-24-SA20	24	1.1/2	38	20	1.1/4	31	92	57	32
ASH21-32-SA12	32	2	51	12	3/4	19	87	57	28
ASH21-32-SA16	32	2	51	16	1	25	92	57	32
ASH21-32-SA20	32	2	51	20	1.1/4	31	92	57	32

HIGH PRESSURE
STAPLE ADAPTORS

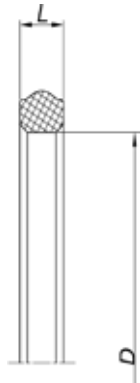
B-9

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

SUPA SEAL FOR HIGH PRESSURE STAPLE ADAPTORS

SERIES ASH28



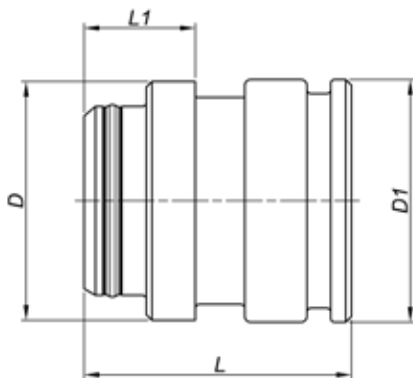
PART REF	NOMINAL BORE			D	L
	DASH	INCH	DN		
ASH28-08*	8	1/2	12	11.5	2.9
ASH28-12	12	3/4	19	17.5	2.9
ASH28-16	16	1	25	26.5	2.9
ASH28-20	20	1.1/4	31	33.5	2.9
ASH28-24	24	1.1/2	38	38.5	4.2
ASH28-32	32	2	51	44.5	4.2

*On special request only; minimum order quantity will apply

Conventional O-rings and Back-Up rings available on request - Please see pages C-24 to C-27

STAPLE MALE END PLUG

SERIES ASH29



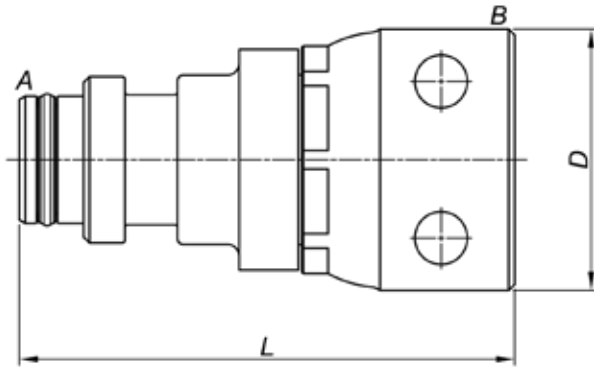
PART REF	NOMINAL BORE			L	L1	D	D1
	DASH	INCH	DN				
ASH29-12	12	3/4	19	45	18	29	29
ASH29-16	16	1	25	61	26	39	39
ASH29-20	20	1.1/4	31	64	26	46	47
ASH29-24	24	1.1/2	38	71	30	55	55
ASH29-32	32	2	51	71	30	64	65
ASH29-40	40	2.1/2	63	85	37	78	79

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

STRAIGHT STAPLE MALE - FEMALE ADAPTOR

SERIES ASH31



PART REF	NOMINAL BORE						L	D
	SIDE "A"			SIDE "B"				
	DASH	INCH	DN	DASH	INCH	DN		
ASH31-16-12	16	1	25	12	3/4	19	84	45
ASH31-20-12	20	1.1/4	31	12	3/4	19	85	45
ASH31-20-16	20	1.1/4	31	16	1	25	110	60
ASH31-24-12	24	1.1/2	38	12	3/4	19	84	45
ASH31-24-16	24	1.1/2	38	16	1	25	100	60
ASH31F-24-20	24	1.1/2	38	20	1.1/4	31	100	70
ASH31-32-12	32	2	51	12	3/4	19	80	45
ASH31-32-16	32	2	51	16	1	25	95	60
ASH31F-32-20	32	2	51	20	1.1/4	32	95	70
ASH31F-32-24	32	2	51	24	1.1/2	38	108	80

"F" -Fixed Design

HIGH PRESSURE
STAPLE ADAPTORS

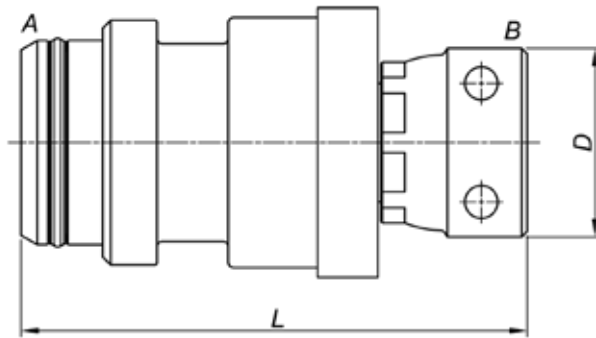
B-11

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

STRAIGHT STAPLE MALE - STD SWIVEL FEMALE ADAPTOR

SERIES ASH31-XX-SAXX



PART REF	NOMINAL BORE						L	D
	SIDE "A"			SIDE "B"				
	DASH	INCH	DN	DASH	INCH	DN		
ASH31-12-SA08	12	3/4	19	8	1/2	12	82	35
ASH31-12-SA12	12	3/4	19	12	3/4	19	77	45
ASH31-16-SA12	16	1	25	12	3/4	19	82	45
ASH31-16-SA16	16	1	25	16	1	25	99	60
ASH31-20-SA08	20	1.1/4	31	8	1/2	12	82	35
ASH31-20-SA12	20	1.1/4	31	12	3/4	19	97	45
ASH31-20-SA16	20	1.1/4	31	16	1	25	103	60
ASH31-20-SA20	20	1.1/4	31	20	1.1/4	31	101	60
ASH31-24-SA16	24	1.1/2	38	16	1	25	95	60
ASH31-24-SA20	24	1.1/2	38	20	1.1/4	31	108	60
ASH31-32-SA16	32	2	51	16	1	25	111	60
ASH31-32-SA20	32	2	51	20	1.1/4	31	92	60

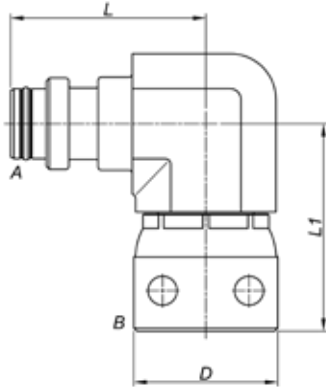
Maximum working pressure for these fittings is limited to the lower performance staple end.

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

90° STAPLE MALE - SWIVEL FEMALE ADAPTOR

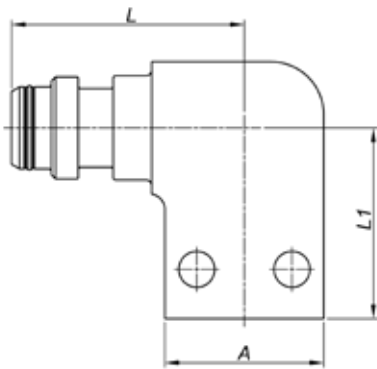
SERIES ASH32



PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASH32-12-12	12	3/4	20	12	3/4	19	61	65	45

90° STAPLE MALE - FIXED FEMALE ADAPTOR

SERIES ASH32F



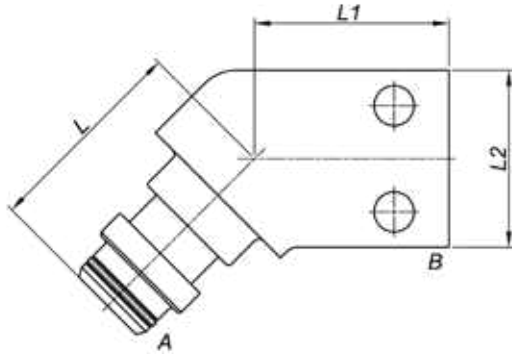
PART REF	NOMINAL BORE			L	L1	A
	DASH	INCH	DN			
ASH32F-12-12	12	3/4	19	61	66	45
ASH32F-16-16	16	1	25	83	85	60
ASH32F-20-20	20	1.1/4	31	101	78	70
ASH32F-24-24	24	1.1/2	38	114	83	82
ASH32F-32-32	32	2	51	114	90	90

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

135° STAPLE MALE - FIXED FEMALE ADAPTOR

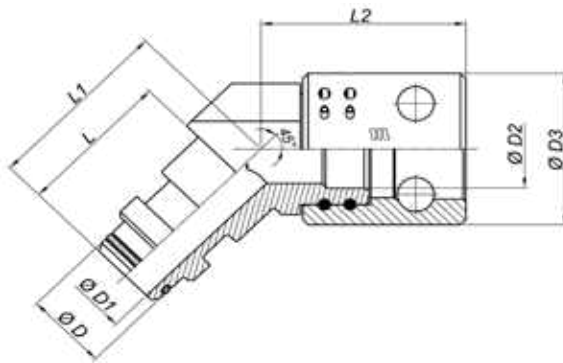
SERIES ASH35F



PART REF	NOMINAL BORE						L	L1	L2
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASH35F-20-20	20	1.1/4	31	20	1.1/4	31	70	64	70
ASH35F-24-24	24	1.1/2	38	24	1.1/2	38	78	64	80
ASH35F-32-32	32	2	51	32	2	51	98	76	90

135° STAPLE MALE - SWIVEL FEMALE

SERIES ASH35



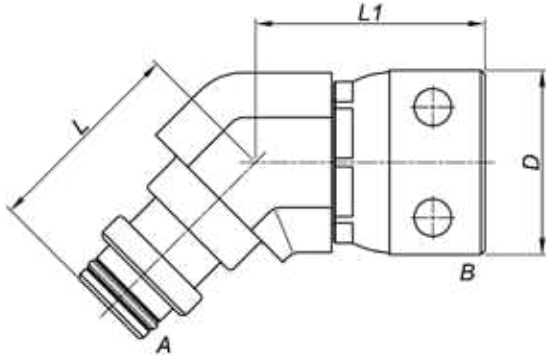
PART REF	NOMINAL BORE			L	L1	L2	D	D1	D2	D3
	DASH	INCH	DN							
ASH35-16-16	16	1	25	58	71	76	31	22	31	60
ASH35-20-20	20	1.1/4	31	58	76.5	75	38	27	38	70
ASH35-24-24	24	1.1/2	38	64	88	81	44	32	44	80
ASH35-32-32	32	2	51	64	88	88	50	38	50	95

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

135° STAPLE MALE - SWIVEL FEMALE ADAPTOR

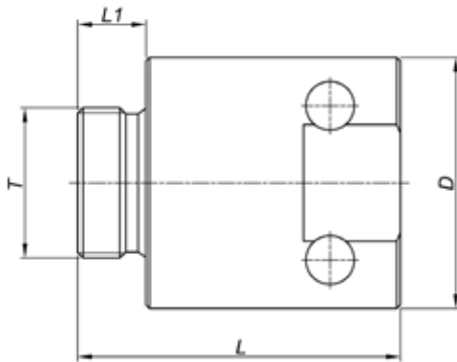
SERIES ASH35



PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASH35-12-12	12	3/4	19	12	3/4	19	51	57	45

BSP MALE FLAT FACE - FEMALE ADAPTOR

SERIES ASH40F



PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
*ASH40-12-12	3/4" BSP	12	3/4	19	70	13	45
*ASH40-16-16	1" BSP	16	1	25	90	17	60
ASH40F-20-20	1.1/4" BSP	20	1.1/4	31	90	19	70
ASH40F-24-24	1.1/2" BSP	24	1.1/2	38	100	19	80
ASH40F-32-32	2" BSP	32	2	51	100	23	95

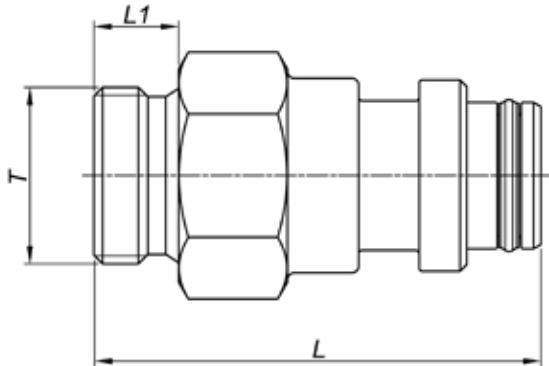
* Swivel Female "F" - Fixed Female

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

BSP MALE FLAT FACE - STAPLE MALE ADAPTOR

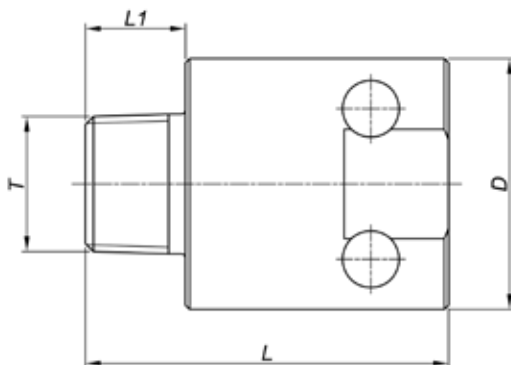
SERIES ASH46



PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASH46-12-12	3/4" BSP	12	3/4	19	68	14	46
ASH46-16-16	1" BSP	16	1	25	86	17	46
ASH46-20-20	1.1/4" BSP	20	1.1/4	31	94	19	50
ASH46-24-24	1.1/2" BSP	24	1.1/2	38	100	19	60
ASH46-32-32	2" BSP	32	2	51	104	23	70

NPTF MALE - FEMALE ADAPTOR

SERIES ASH50



PART REF	THREAD (T)	NOMINAL BORE			L	L1	D	AF
		DASH	INCH	DN				
*ASH50-12-12	3/4" NPTF	12	3/4	19	70	19	45	36
*ASH50-16-16	1" NPTF	16	1	25	95	24	60	50
ASH50F-20-20	1.1/4" NPTF	20	1.1/4	31	95	24	70	60
ASH50F-24-24	1.1/2" NPTF	24	1.1/2	38	95	26	80	70
ASH50F-32-32	2" NPTF	32	2	51	95	26	95	85

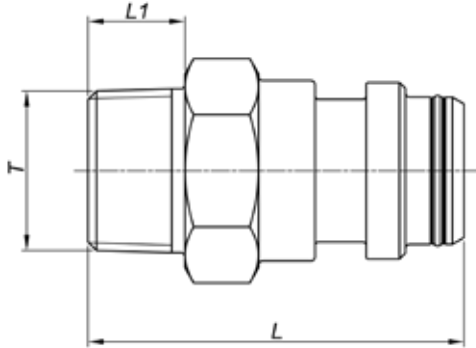
* Swivel Female "F" - Fixed Female

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

NPTF MALE - STAPLE MALE ADAPTOR

SERIES ASH56



PART REF	THREAD (T)	NOMINAL BORE			L	L1	AF
		DASH	INCH	DN			
ASH56-12-12	3/4" NPTF	12	3/4	19	73	19	32
ASH56-16-16	1" NPTF	16	1	25	93	24	46
ASH56-20-20	1.1/4" NPTF	20	1.1/4	31	97	25	50
ASH56-24-24	1.1/2" NPTF	24	1.1/2	38	106	26	60
ASH56-32-32	2" NPTF	32	2	51	106	26	70

HIGH PRESSURE
STAPLE ADAPTORS

B-17

All dimensions in mm

HIGH PRESSURE STAPLE ADAPTORS

HIGH PRESSURE
STAPLE ADAPTORS

B-18

FLUSHFIT STAPLE ADAPTORS

ASAF / ASHF Series Adaptors

FLUSHFIT

Advancements in mining technology lead to the introduction of new production methods which resulted in the need for a FlushFit staple adaptor.

The ASAF / ASHF series of staple adaptor allows the installation of hydraulic hoses side by side or coiled without the risk of damage during movement.



FLUSHFIT
STAPLE ADAPTORS

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FLUSHFIT STAPLE ADAPTORS

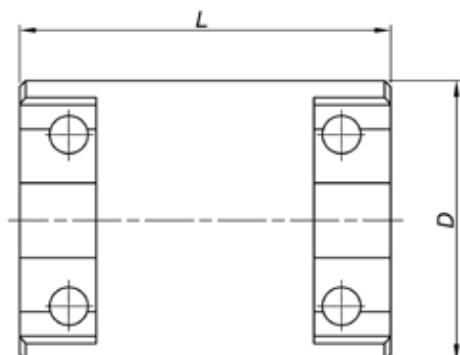
FLUSHFIT
STAPLE ADAPTORS

C-11

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT FEMALE ADAPTOR

SERIES ASAF01 AND ASAFP01



PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASAF01-24-24	24	1.1/2	40	92	70
ASAF01-32-32	32	2	50	78	76
ASAF01-40-40	40	2.1/2	63	106	106

PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASAFP01-48-48	48	3	76	136	112
*ASAFPX01-48-48	48	3	76	145	115
ASAFP01-56-56	56	3.1/2	89	155	132
ASAFP01-64-64	64	4	102	145	140

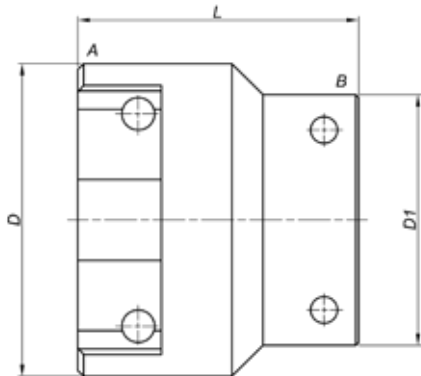
* ASAFPX01 => Flushfit Plus Extra for WP = 140 bar

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT FEMALE/STANDARD FEMALE

SERIES ASAF01-SA AND ASAFP01-SA



PART REF	NOMINAL BORE						L	D	D1
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASAF01-24-SA24	24	1.1/2	38	24	1.1/2	38	84	76	76
ASAF01-32-SA24	32	2	51	24	1.1/2	38	78	76	76
ASAF01-32-SA32	32	2	51	32	2	51	80	76	85
ASAF01-40-SA32	40	2.1/2	63	32	2	51	94	106	85
ASAF01-40-SA40	40	2.1/2	63	40	2.1/2	63	122	106	106

PART REF	NOMINAL BORE						L	D	D1
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
*ASAFPX01-40-SA40	40	2.1/2	63	40	2.1/2	63	122	106	106
ASAFP01-48-SA32	48	3	76	32	2	51	117	112	85

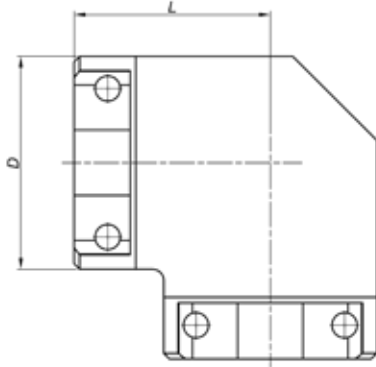
*ASAFPX01 => Flushfit Plus Extra for WP = 140 bar

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

90° FLUSHFIT FEMALE ADAPTOR

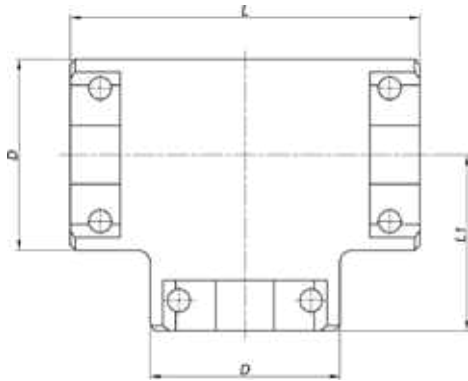
SERIES ASAF02



PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASAF02-32-32	32	2	51	70	76
ASAF02-40-40	40	2.1/2	63	95	106

T PIECE FLUSHFIT FEMALE ADAPTOR

SERIES ASAF03



PART REF	NOMINAL BORE			L	L1	D
	DASH	INCH	DN			
*ASAF03-24-24-24	24	1.1/2	38	154	101	70
ASAF03-32-32-32	32	2	51	170	125	76
**ASAF03-40-40-40	40	2.1/2	63	200	132	106

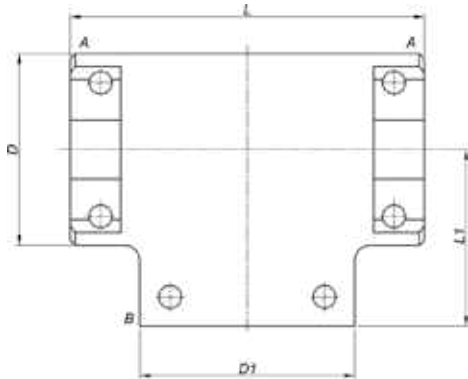
* Seal Fitted to Male End

** Welded design

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

T PIECE FLUSHFIT - STANDARD FEMALE ADAPTOR SERIES ASAF03-SA



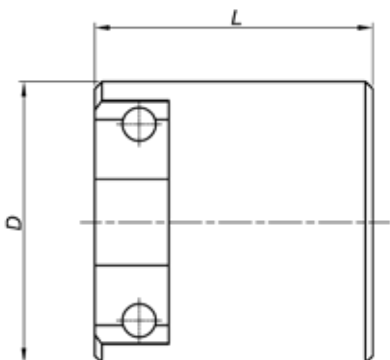
PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
*ASAF03-24-24-SA24	24	1.1/2	38	24	1.1/2	41	154	99	70	76
ASAF03-32-32-SA32	32	2	51	32	2	51	185	90	76	85
ASAF03-40-40-SA32	40	2.1/2	63	32	2	51	185	90	106	85

* Seal Fitted to Male End

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT END CAP

SERIES ASAF06 AND ASAFP06



PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASAF06-16	16	1	25	60	60
ASAF06-24	24	1.1/2	38	72	70
ASAF06-32	32	2	51	75	76
ASAF06-40	40	2.1/2	63	85	106

PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASAFP06-48	48	3	76	104	112
*ASAFPX06-48	48	3	76	109	115
ASAFP06-56	56	3.1/2	89	115	132
ASAFP06-64	64	4	102	109	140

* ASAFPX06 => Flushfit Plus Extra for WP = 140 bar

FLUSHFIT
STAPLE ADAPTORS

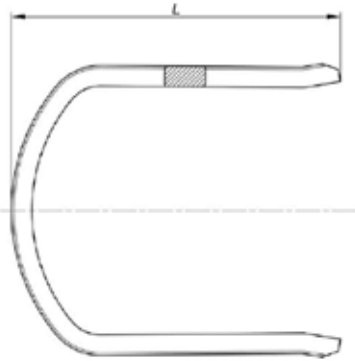
C-5

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT STAINLESS STAPLE

SERIES ASAF08 AND ASAFP08



PART REF	NOMINAL BORE			SECTION	L
	DASH	INCH	DN		
ASAF08-16	16	1	25	8 x 5	55
ASAF08-24	24	1.1/2	38	8 x 4	59
ASAF08-32	32	2	51	8 x 4	67
ASAF08-40	40	2.1/2	63	8 x 5	85

PART REF	NOMINAL BORE			SECTION	L
	DASH	INCH	DN		
ASAFP08D-48	48	3	76	"D" 6.6 x 6.5	93
*ASAFPX08-48	48	3	76	12 x 6	96
*ASAFPX08-56	56	3.1/2	89	12 x 6	108

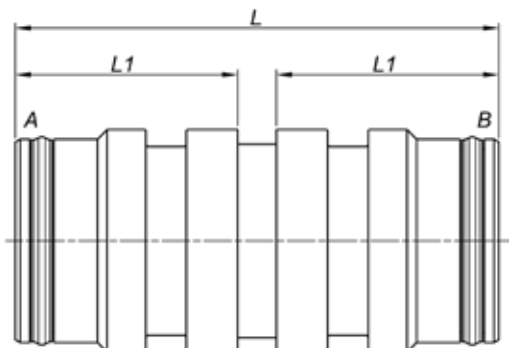
* ASAFPX => Flushfit Plus Extra for W.P = 140 bar

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT MALE - MALE ADAPTOR

SERIES ASAF21 AND ASAFP21



PART REF	NOMINAL BORE						L	L1
	SIDE "A"			SIDE "B"				
	DASH	INCH	DN	DASH	INCH	DN		
ASAF21-16-16	16	1	25	16	1	25	82	38
ASAF21-24-24	24	1.1/2	38	24	1.1/2	38	100	46
*ASAF21-32-32	32	2	51	32	2	51	89	37
*ASAF21-40-40	40	2.1/2	63	40	2.1/2	63	112	51

*Internal sealing

PART REF	NOMINAL BORE						L	L1
	SIDE "A"			SIDE "B"				
	DASH	INCH	DN	DASH	INCH	DN		
ASAFP21-48-48	48	3	76	48	3	76	160	75
*ASAFPX21-48-48	48	3	76	48	3	76	156	74
ASAFP21-56-56	56	3.1/2	89	56	3.1/2	89	164	78
ASAFP21-64-64	64	4	102	64	4	102	156	74

* Flushfit Plus Extra for WP = 140 bar

FLUSHFIT
STAPLE ADAPTORS

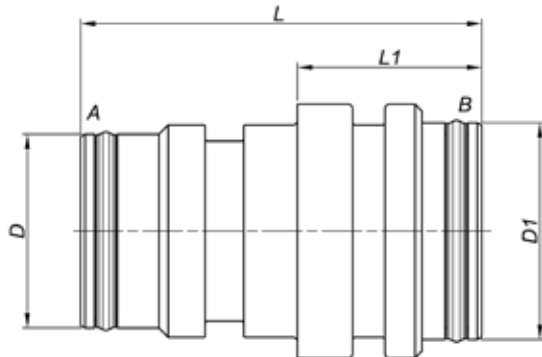
C-7

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT MALE - STANDARD MALE ADAPTOR

SERIES ASAF21-SA AND ASAFP21-SA



PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASAF21-24-SA24	24	1.1/2	38	24	1.1/2	38	87	40	42	47
*ASAF21-32-SA32	32	2	51	32	2	51	82	40	56	56
*ASAF21-40-SA32	40	2.1/2	63	32	2	51	91	40	76	56
*ASAF21-40-SA40	40	2.1/2	63	40	2.1/2	63	146	73	76	79

* Internal sealing on ASAF end ("A")

PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASAFP21-48-SA32	48	3	76	32	2	51	125	41	79	56
*ASAFPX21-48-SA32	40	2.1/2	63	32	2	51	118	44	79	56
*ASAFPX21-48-SA40	48	3	76	40	2.1/2	63	149	67	79	79

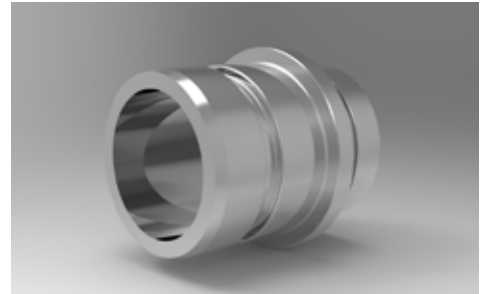
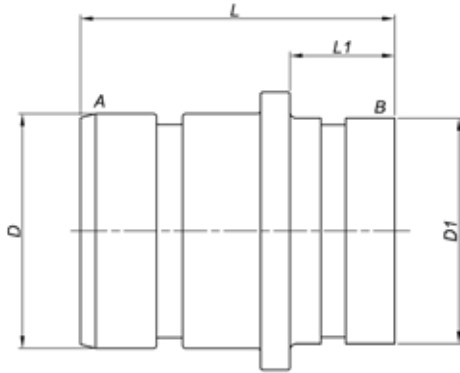
* Flushfit Plus Extra for WP = 140 bar

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

VICTAULIC - FLUSHFIT MALE

SERIES ASAF21-XX-VIC

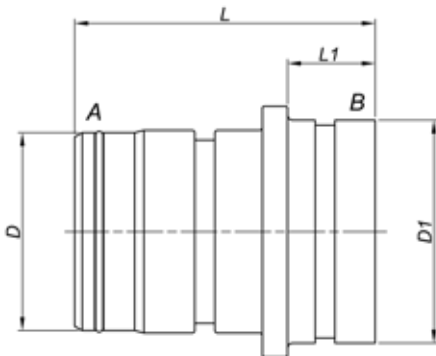


PART REF	NOMINAL BORE						L	L1	D	D2
	SIDE 'A'			SIDE 'B'						
	DASH	INCH	DN	DASH	INCH	DN				
*ASAF21-40-VIC40	40	2.1/2	63	40	2.1/2	63	102	34	76	73
*ASAF21-40-VIC48	40	2.1/2	63	48	3	76	103.5	35	76	89

* Internal sealing on ASAF end ("A")

VICTAULIC - FLUSHFIT PLUS MALE

SERIES ASAFP21-XX-VIC



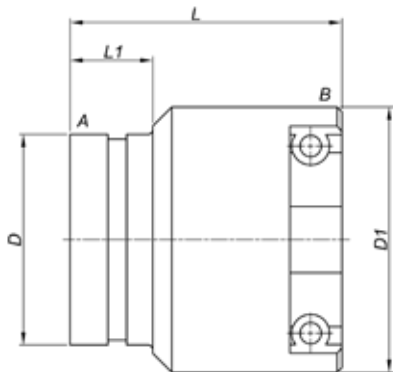
PART REF	NOMINAL BORE						L	L1	D	D1	D2
	SIDE 'A'			SIDE 'B'							
	DASH	INCH	DN	DASH	INCH	DN					
ASAFP21-48-VIC48	48	3	76	48	3	76	120	35	81	63	89
ASAFP21-56-VIC48	56	3.1/2	89	48	3	76	114	31.5	86	70	89

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

VICTAULIC - FLUSHFIT FEMALE

SERIES ASAF/ASAFP31-VIC-XX



PART REF	NOMINAL BORE						L	L1	D	D1	D2
	SIDE 'A'			SIDE 'B'							
	DASH	INCH	DN	DASH	INCH	DN					
ASAF31-VIC40-40	40	2.1/2	63	40	2.1/2	63	97	34	73	60	106

PART REF	NOMINAL BORE						L	L1	D	D1	D2
	SIDE 'A'			SIDE 'B'							
	DASH	INCH	DN	DASH	INCH	DN					
ASAFP31-VIC48-48	48	3	76	48	3	76	115	35	89	75	112
ASAFP31-VIC48-56	48	3	76	56	3.1/2	89	123	35	89	75	132

FLUSHFIT
STAPLE ADAPTORS

C-10

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

SUPA SEAL FOR FLUSHFIT STAPLE ADAPTORS

SERIES ASAF28



PART REF	NOMINAL BORE			D	L
	DASH	INCH	DN		
ASAF28-16	16	1	25	26.5	2.9
*ASAF28-24	24	1.1/2	38	37.5	4.2
**ASAF28-32	32	2	51	59.6	2.2
**ASAF28-40	40	2.1/2	63	81.3	3.1
*ASAF28-48	48	3	76	73.4	2.9
*ASAF28-56	56	3.1/2	89	80.4	2.9

* On special request only; minimum order quantity will apply

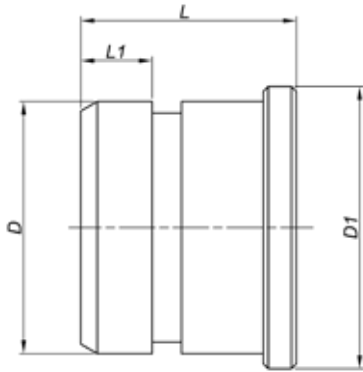
** Inverted profile for inner sealing application => D = outside diameter

Conventional O-rings and Back-Up rings available on request - Please see pages C-24 to C-27

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT STAPLE MALE END PLUG

SERIES ASAF29 AND ASAFP29



PART REF	NOMINAL BORE			L	L1	D	D1
	DASH	INCH	DN				
ASAF29-16	16	1	25	44	19	31	34.5
ASAF29-24	24	1.1/2	38	58	27	42	46
*ASAF29-32	32	2	51	48	19.5	56	65
*ASAF29-40	40	2.1/2	63	67	25	76	85

* Internal Sealing

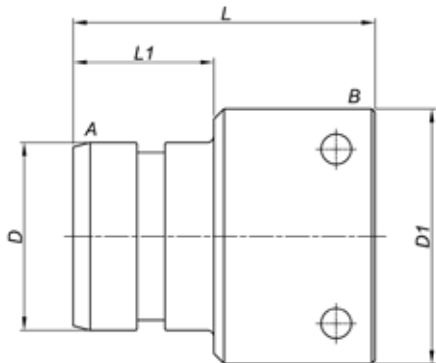
PART REF	NOMINAL BORE			L	L1	D	D1
	DASH	INCH	DN				
ASAFP29-48	48	3	76	89	48	79	81
*ASAFPX29-48	48	3	76	92	43.6	79	95
ASAFP29-56	56	3.1/2	89	100	47.5	86	110
ASAFP29-64	64	4	102	103	45.5	101	125

* Flushfit Plus Extra for WP = 140 bar

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT MALE - STANDARD FIXED FEMALE ADAPTOR

SERIES ASAF31F-XX-SA

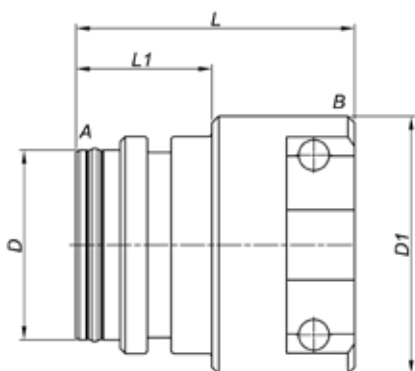


PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
*ASAF31F-24-SA24	24	1.1/2	38	24	1.1/2	38	101	52	42	76
ASAF31F-32-SA32	32	2	51	32	2	51	89	37	56	85
ASAF31F-40-SA32	40	2.1/2	63	32	2	51	100	56	76	85
ASAF31F-40-SA40	40	2.1/2	63	40	2.1/2	63	134	56	76	106

* Seal Fitted to Male End

STANDARD MALE - FLUSHFIT FIXED FEMALE ADAPTOR

SERIES ASAF31F-SA-XX



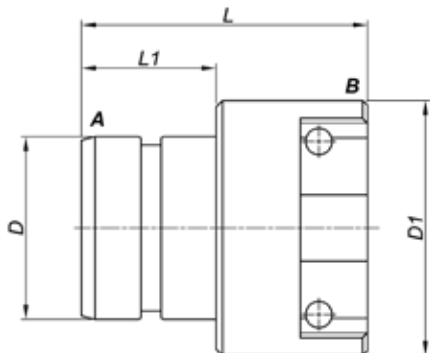
PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASAF31F-SA24-24	24	1.1/2	38	32	1.1/2	38	94	40	47	70
ASAF31F-SA32-32	32	2	51	32	2	51	82	40	56	76
ASAF31F-SA32-40	32	2	51	40	2.1/2	63	101	40	56	106
ASAF31F-SA40-40	40	2.1/2	63	40	2.1/2	63	134	73	79	106

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

FLUSHIT MALE - FIXED FEMALE ADAPTOR

SERIES ASAF31F-XX-XX

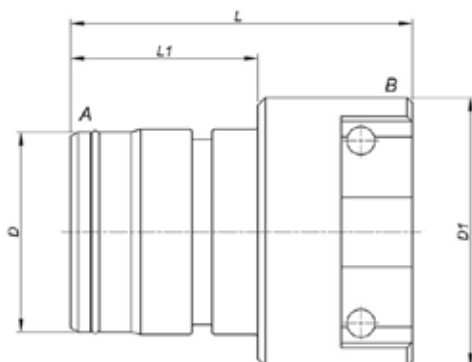


PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
*ASAF31F-24-32	24	1.1/2	38	32	2	51	96	47	42	76
ASAF31F-32-40	32	2	51	40	2.1/2	63	98	37	56	106
ASAF31F-40-32	40	2.1/2	63	32	2	51	96	56	76	76
ASAF31F-40-40	40	2.1/2	63	40	2.1/2	63	118	56	76	106

* Seal Fitted to Male End

FLUSHIT MALE - FEMALE

SERIES ASAFP31



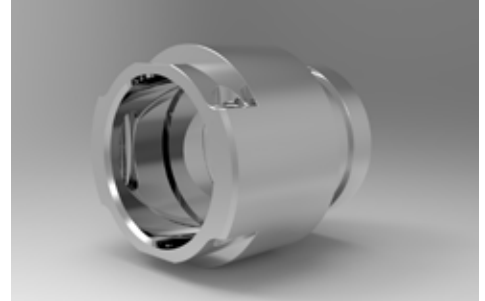
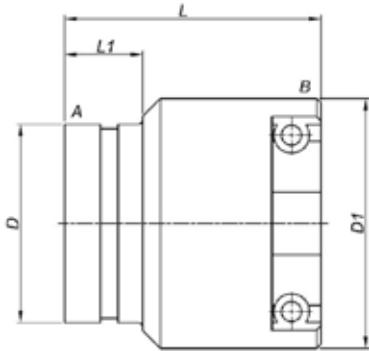
PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASAFP31-SA32-48	32	2	51	48	3	76	121	41	56	112
ASAFP31-SAF32-48	32	2	51	48	3	76	124	42	56	112
ASAFP31-48-SA12	48	3	76	12	3/4	19	114	81	79	45
ASAFP31-48-SAF40	48	3	76	40	2.1/2	63	135	74	79	106
ASAFP31-48-48	48	3	76	48	3	76	154	74	79	112

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

VICTAULIC FLUSHFIT FEMALE

SERIES ASAF31-VIC-XX AND ASAFP31-VIC-XX



PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
ASAF31-VIC40-40	40	2.1/2	63	40	2.1/2	63	97	34	73	106

PART REF	NOMINAL BORE						L	L1	D	D1
	SIDE "A"			SIDE "B"						
	DASH	INCH	DN	DASH	INCH	DN				
*ASAFP31-VIC48-48	48	3	76	48	3	76	115	35	89	112
*ASAFP31-VIC48-56	48	3	76	56	3.1/2	89	123	35	89	132

* Flushfit Plus for WP = 105 Bar

FLUSHFIT
STAPLE ADAPTORS

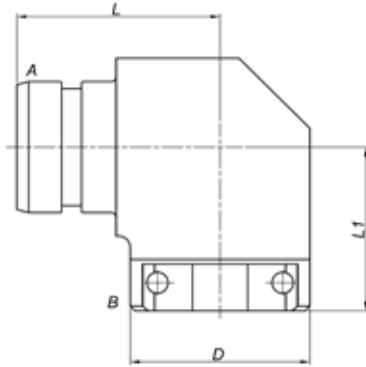
C-15

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

90° FLUSHFIT MALE - FEMALE

SERIES ASAF32 AND ASAFP32



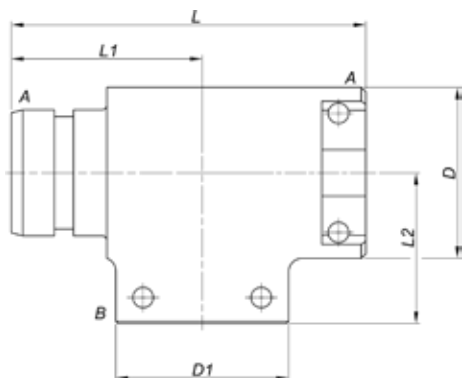
PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASAF32-32-32	32	2	51	32	2	51	96	70	76
ASAF32-40-40	40	2.1/2	63	40	2.1/2	63	109	91	106

PART REF	NOMINAL BORE						L	L1	D
	SIDE "A"			SIDE "B"					
	DASH	INCH	DN	DASH	INCH	DN			
ASAFP32-48-48	48	3	76	48	3	76	136	105	112

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT MALE - FEMALE - SA FEMALE

SERIES ASAF34-XX-XX-SA AND ASAFP34-XX-XX-SA



PART REF	NOMINAL BORE						L	L1	L2	D	D1
	SIDE 'A'			SIDE 'B'							
	DASH	INCH	DN	DASH	INCH	DN					
ASAF34-32-32-SA24	32	2	51	24	1.1/2	38	156	84	112	76	76
ASAF34-40-40-SA24	40	2.1/2	63	24	1.1/2	38	231	118.5	117	106	76
ASAF34-40-40-SA32	40	2.1/2	63	32	2	51	231	118.5	115	106	85

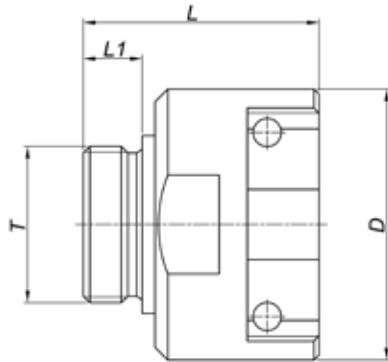
PART REF	NOMINAL BORE						L	L1	L2	D	D1
	SIDE 'A'			SIDE 'B'							
	DASH	INCH	DN	DASH	INCH	DN					
ASAFP34-48-48-SA32	48	3	76	32	2	50	251	131	119	112	85

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

BSP MALE FLAT FACE - FLUSHFIT FIXED FEMALE ADAPTOR

SERIES ASAF40

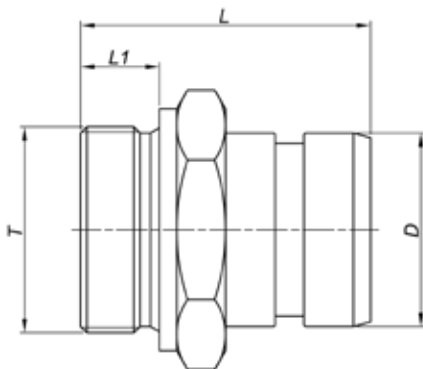


PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
*ASAF40-24-24	1.1/2" BSP	24	1.1/2	38	77	20	70
ASAF40-32-32	2" BSP	32	2	51	70	23	76
ASAF40-40-40	2.1/2" BSP	40	2.1/2	63	87	27	106

* Seal Fitted to Male End

BSP MALE FLAT FACE - FLUSHFIT MALE ADAPTOR

SERIES ASAF46



PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
*ASAF46-24-24	1.1/2" BSP	24	1.1/2	38	89	19	42
ASAF46-32-32	2" BSP	32	2	51	84	23	56
ASAF46-40-40	2.1/2" BSP	40	2.1/2	63	108	27	76

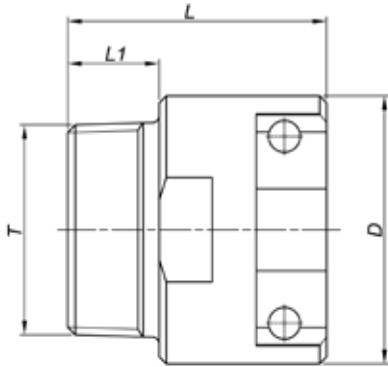
* Seal Fitted to Male End

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

NPTF MALE - FLUSHFIT FIXED FEMALE ADAPTOR

SERIES ASAF50

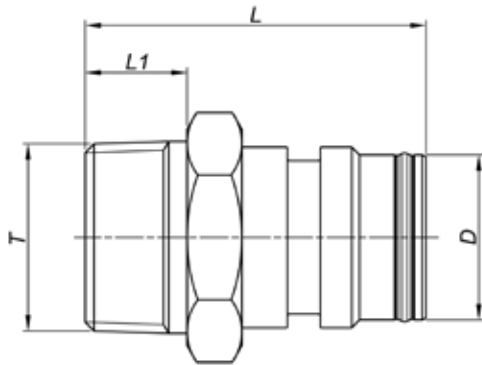


PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
*ASAF50-24-24	1.1/2" NPTF	24	1.1/2	38	80	26	70
ASAF50-32-32	2" NPTF	32	2	51	75	26	76
ASAF50-40-40	2.1/2" NPTF	40	2.1/2	63	88	29	106

* Seal Fitted to Male End

NPTF MALE - STAPLE MALE ADAPTOR

SERIES ASAF56



PART REF	THREAD (T)	NOMINAL BORE			L	L1	D
		DASH	INCH	DN			
*ASAF56-24-24	1.1/2" NPTF	24	1.1/2	38	87	26	42
ASAF56-32-32	2" NPTF	32	2	51	82	26	56
ASAF56-40-40	2.1/2" NPTF	40	2.1/2	65	113	39	76

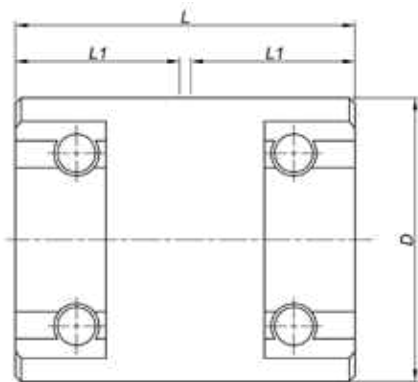
* Seal Fitted to Male End

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

STRAIGHT FEMALE HIGH PERFORMANCE FLUSHFIT ADAPTOR

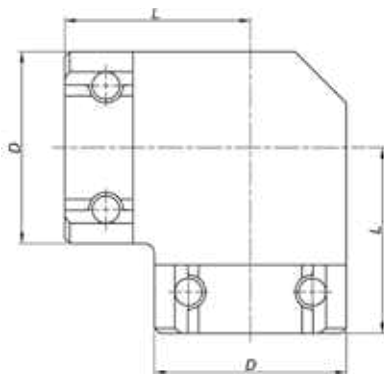
SERIES ASHF01



PART REF	NOMINAL BORE			L	L1	D
	DASH	INCH	DN			
ASHF01-24-24	24	1.1/2	38	120	58	89
ASHF01-32-32	32	2	51	120	41	100
ASHF01-40-40	40	2.1/2	65	141	48	110

90° ASH FLUSHFIT FEMALE

SERIES ASHF02



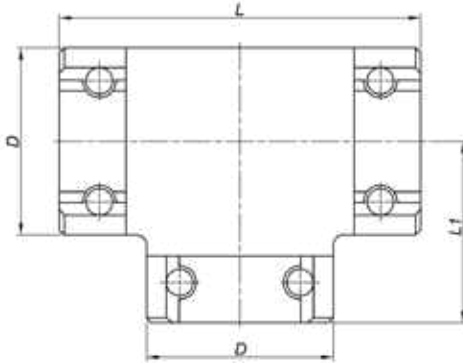
PART REF	NOMINAL BORE			L	D
	DASH	INCH	DN		
ASHF02-40-40	40	2.1/2	63	108.5	112
ASHF02-48-48	48	3	76	125	146

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

T - HIGH PERFORMANCE FLUSHFIT FEMALE

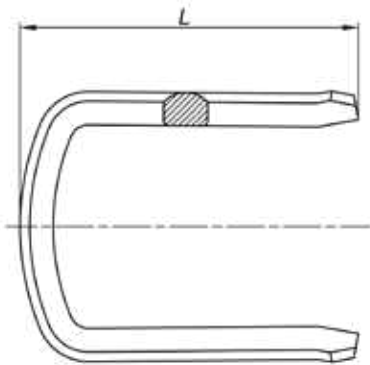
SERIES ASHF03



PART REF	NOMINAL BORE			L	L1	D
	DASH	INCH	DN			
ASHF03-40-40-40	40	2.1/2	63	217	108.5	112
ASHF03-48-48-48	48	3	76	250	125	146

HIGH PERFORMANCE FLUSHFIT STAINLESS D STAPLE

SERIES ASHF08D



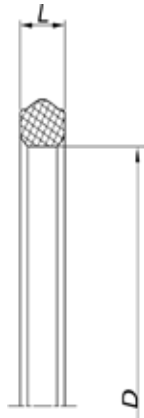
PART REF	NOMINAL BORE			SECTION	L
	DASH	INCH	DN		
ASHF08D-24	24	1.1/2	38	12 x 9.4	78
ASHF08D-32	32	2	51	12 x 9.4	86
ASHF08D-40	40	2.1/2	63	14 x 10.5	107
ASHF08D-48	48	3	76	16 x 12.4	126

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

SUPA SEAL FOR HIGH PRESSURE FLUSHFIT STAPLE ADAPTORS

SERIES ASHF28 (ALSO COMPATIBLE WITH SLH28)

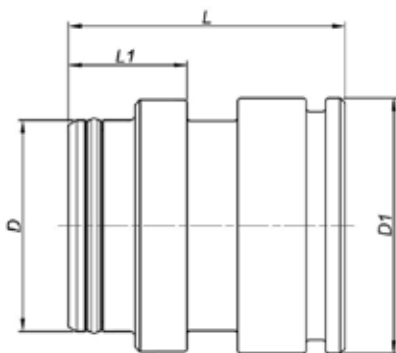


PART REF	NOMINAL BORE			D	L
	DASH	INCH	DN		
ASHF28-24	-24	1.1/2	38	38.5	4.2
ASHF28-32	-32	2	51	44.5	4.2
ASHF28-40	-40	2.1/2	63	58.5	4.6
ASHF28-48	-48	3	76	70.5	4.6

Conventional O-rings and Back-Up rings available on request - Please see pages C-24 to C-27

HIGH PERFORMANCE FLUSHFIT STAPLE MALE END PLUG

SERIES ASHF29



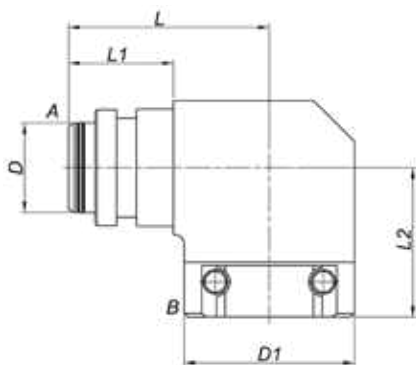
PART REF	NOMINAL BORE			L	L1	D	D1
	DASH	INCH	DN				
ASHF29-24	24	1.1/2	38	71	30	44	55
ASHF29-32	32	2	51	71	32	50	64
ASHF29-40	40	2.1/2	65	85	37	65	78
ASHF29-48	48	3	76	105	41	77	115

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

90° HIGH PERFORMANCE FLUSHFIT MALE - FEMALE

SERIES ASHF32



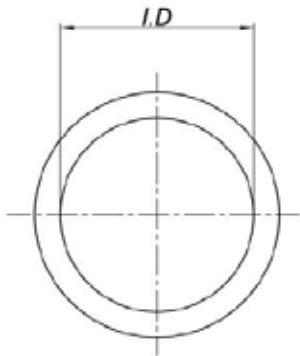
PART REF	NOMINAL BORE						L	L1	L2	D	D1
	SIDE A			SIDE B							
	DASH	INCH	DN	DASH	INCH	DN					
ASHF32-40-40	40	2.1/2	63	40	2.1/2	63	147	79	108	65	112
ASHF32-48-48	48	3	76	48	3	76	174	92	128	77	146

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

STAPLE MALE END - O-RING

SERIES ASA18 - ASAF18



Material: Nitrile Rubber

PART REF	NOMINAL BORE			I.D.	d
	DASH	INCH	DN		
ASA18-04	-4	1/4	6	6	2
ASA18-06	-6	3/8	10	10	2
ASA18-08	-8	1/2	12	13	2.5
ASA18-12	-12	3/4	19	19	2.5
*ASA18-16	-16	1	25	25	2.5
ASA18-20	-20	1.1/4	31	33	2.5
ASA18-24	-24	1.1/2	38	40	3
ASA18-32	-32	2	51	49	3
**ASA18-40	-40	2.1/2	63	72	3
***ASA18-48	-48	3	76	80	3

* The same as ASAF18-16

** The same as ASAF18-40 & ASAFPX18-48

*** The same as ASAFP18-56

SERIES ASAF18

Material: Nitrile Rubber

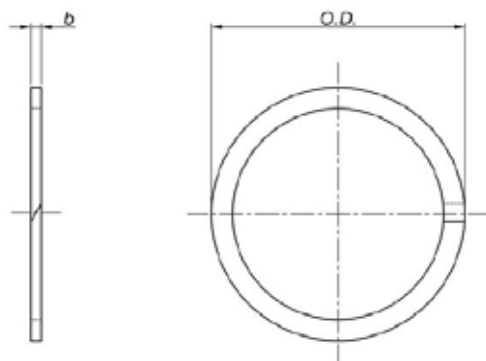
PART REF	NOMINAL BORE			I.D.	d
	DASH	INCH	DN		
ASAF18-24	-24	1.1/2	38	35	2.5
ASAF18-32	-32	2	51	56	2
ASAF18-40	-40	2.1/2	63	75	3

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

STAPLE MALE END - BACK-UP-RING

SERIES ASA19 - ASAF19



Material: Polyamide

PART REF	NOMINAL BORE			O.D.	b
	DASH	INCH	DN		
ASA19-04	-4	1/4	6	10	0.8
ASA19-06	-6	3/8	10	14	0.8
ASA19-08	-8	1/2	12	18	0.8
ASA19-12	-12	3/4	19	24	0.8
*ASA19-16	-16	1	25	31	0.8
ASA19-20	-20	1.1/4	31	38	0.8
ASA19-24	-24	1.1/2	38	47	1.5
ASA19-32	-32	2	51	56	1.5

* The same as ASAF19-16

SERIES ASAF19

Material: Polyamide

PART REF	NOMINAL BORE			O.D.	b
	DASH	INCH	DN		
ASAF19-24	-24	1.1/2	38	42	1.5

FLUSHFIT
STAPLE ADAPTORS

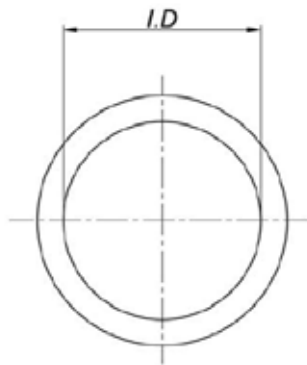
C-25

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

STAPLE MALE END - O-RING

SERIES ASH18 - ASHF18



Material: Nitrile Rubber

PART REF	NOMINAL BORE			I.D.	d
	DASH	INCH	DN		
ASH18-08	-8	1/2	12	11	2.5
ASH18-12	-12	3/4	19	18	2.5
ASH18-16	-16	1	25	25	2.5
ASH18-20	-20	1.1/4	31	33	2.5
*ASH18-24	-24	1.1/2	38	38	3
*ASH18-32	-32	2	51	44	3

* The same as ASHF18-24

** The same as ASHF18-32

SERIES ASHF18

Material: Nitrile Rubber

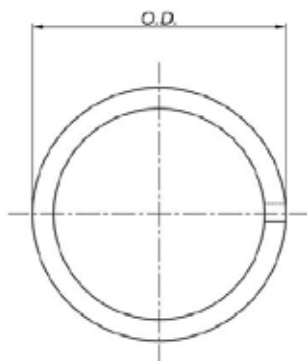
PART REF	NOMINAL BORE			I.D.	d
	DASH	INCH	DN		
ASHF18-40	-40	2.1/2	63	59	3.5
ASHF18-48	-48	3	76	70	3.5

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

STAPLE MALE END - BACK-UP-RING

SERIES ASH19 - ASHF19



Material: Polyamide

PART REF	NOMINAL BORE			O.D.	b
	DASH	INCH	DN		
ASH19-08	-8	1/2	12	16	0.8
ASH19-12	-12	3/4	19	22	0.8
ASH19-16	-16	1	25	31	0.8
ASH19-20	-20	1.1/4	31	38	0.8
*ASH19-24	-24	1.1/2	38	44	1.5
**ASH19-32	-32	2	51	50	1.5

* The same as ASHF19-24

** The same as ASHF19-32

SERIES ASHF19

Material: Polyamide

PART REF	NOMINAL BORE			O.D.	b
	DASH	INCH	DN		
ASHF19-40	-40	2.1/2	63	65	1.5
ASHF19-48	-48	3	76	77	1.5

FLUSHFIT
STAPLE ADAPTORS

C-27

All dimensions in mm

FLUSHFIT STAPLE ADAPTORS

FLUSHFIT
STAPLE ADAPTORS

C-24

Staple Ball Valves

To compliment the staple adaptor programme, Manuli Hydraulics has an extensive range of male and female staple ball valves, available with swivel females or the cost effective compact fixed female option.

Ball valves are supplied with various handle styles including a lockable safety handle.

In addition to the popular two-way design, alternative 3 and 4-way configurations can also be supplied.

Staple ball valves are available from DN6 (1/4") to DN63 (2-1/2").



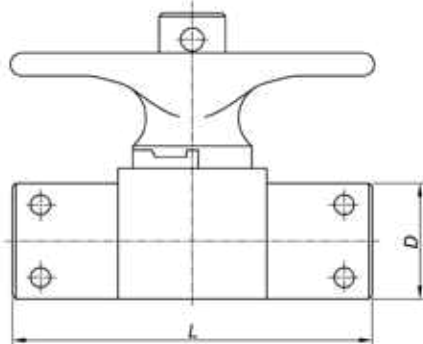
STAPLE BALL VALVES

STAPLE
BALL VALVES

D-11

STANDARD STAPLE FEMALE - FEMALE

SERIES ASAV01

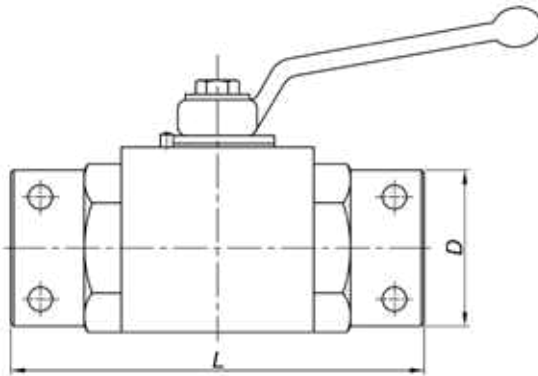


PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASAV01-06-6	6	3/8	10	7220	500	100	30
ASAV01-08-6	8	1/2	12	7220	500	100	35
ASAV01-12-6	12	3/4	20	7220	500	130	40

Alternative handle options: 1,2,5

STANDARD STAPLE FEMALE - FEMALE

SERIES ASAV01



PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASAV01-16-1	16	1	25	5770	400	164	55
ASAV01-20-1	20	1.1/4	31	4330	300	164	60

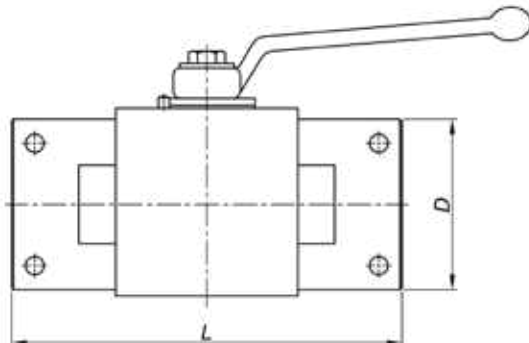
Alternative handle options: 3,5,6

All dimensions in mm

STAPLE BALL VALVES

STANDARD STAPLE FEMALE - FEMALE

SERIES ASAV01

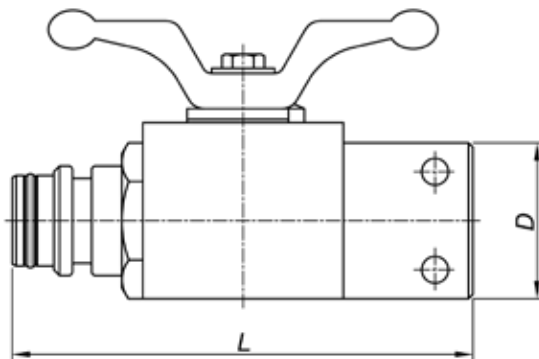


PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASAV01-24-1	24	1.1/2	38	3625	250	190	75
ASAV01-32-1	32	2	51	2900	200	195	85

Handle options: 1PL

STANDARD STAPLE MALE - FIXED FEMALE

SERIES ASAV31F



PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASAV31F-06-2	6	3/8	10	7220	500	100	30
ASAV31F-08-2	8	1/2	12	7220	500	100	35
ASAV31F-12-2	12	3/4	19	7220	500	130	40

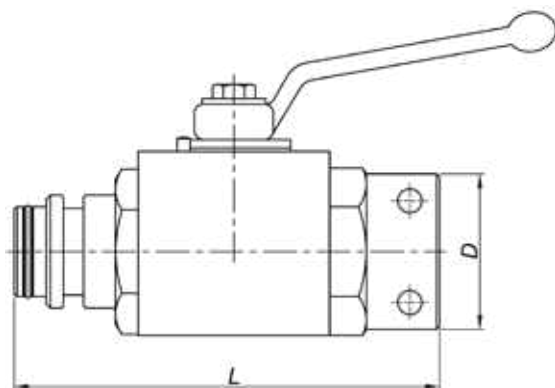
Alternative handle options: 1,5,6

All dimensions in mm

STAPLE BALL VALVES

STANDARD STAPLE MALE - FIXED FEMALE

SERIES ASAV31F

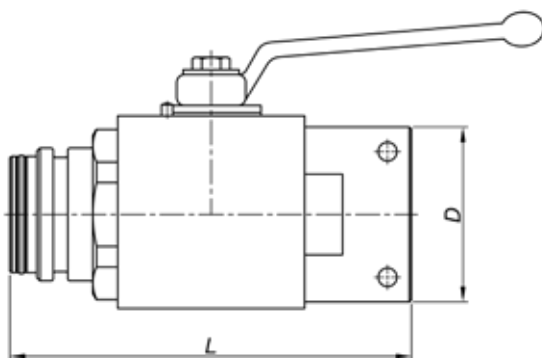


PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASAV31F-16-1	16	1	25	5770	400	164	55
ASAV31F-20-1	20	1.1/4	31	4330	300	164	60

Alternative handle options: 3,5,6

STANDARD STAPLE MALE - FIXED FEMALE

SERIES ASAV31F



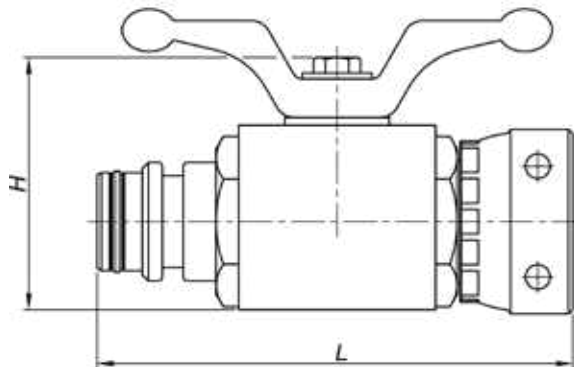
PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASAV31F-24-1	24	1.1/2	38	3625	250	195	75
ASAV31F-32-1	32	2	51	2900	200	195	85

Handle options: 1PL

STAPLE BALL VALVES

STANDARD STAPLE MALE - SWIVEL FEMALE

SERIES ASAV31

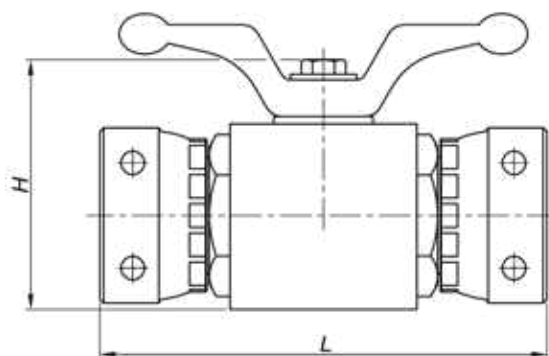


PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	H
ASAV31-04-2	4	1/4	06	7220	500	90	50
ASAV31-06-2	6	3/8	10	7220	500	108	56
ASAV31-08-2	8	1/2	12	7220	500	111	56
ASAV31-12-2	12	3/4	19	7220	500	116	66
ASAV31-16-2	16	1	25	5770	400	151	88
ASAV31-20-2	20	1.1/4	31	4330	300	149	88

Alternative handle options: 1,6

STANDARD STAPLE SWIVEL FEMALE - SWIVEL FEMALE

SERIES ASAV11



PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	H
ASAV11-04-2	4	1/4	06	7220	500	104	50
ASAV11-06-2	6	3/8	10	7220	500	105	56
ASAV11-08-2	8	1/2	12	7220	500	117	56
ASAV11-12-2	12	3/4	19	7220	500	114	66
ASAV11-16-2	16	1	25	5770	400	152	88
ASAV11-20-2	20	1.1/4	31	4330	300	145	88

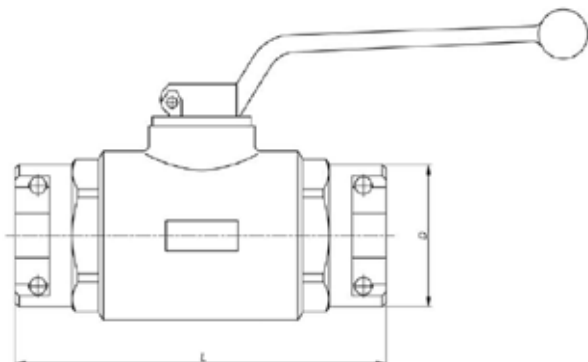
Alternative handle options: 1,6

All dimensions in mm

STAPLE BALL VALVES

FLUSHFIT FEMALE - FEMALE

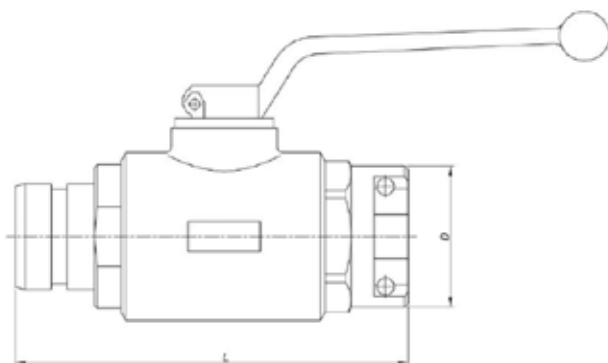
SERIES ASAFV01



PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	PSI	BAR	L	D
AASAFV01-32-1	32	2	51	2320	160	196	75
ASAFV01-40-1	40	2.1/2	63	2320	160	258	106

FLUSHFIT MALE - FEMALE

SERIES ASAFV31

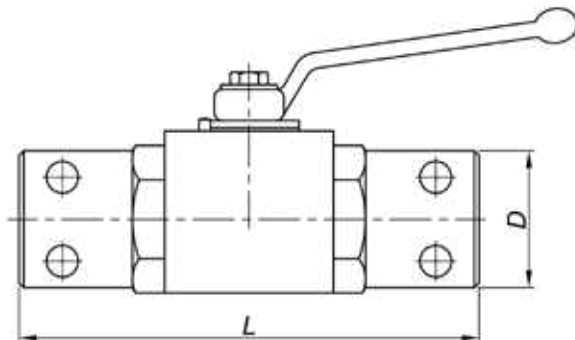


PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	PSI	BAR	L	D
ASAFV31-32-1	32	2	51	2320	160	208	75
ASAFV31-40-1	40	2.1/2	63	2320	160	260	106

All dimensions in mm

STAPLE BALL VALVES

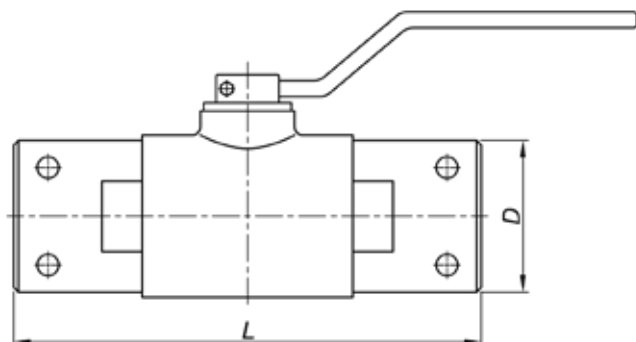
HIGH PERFORMANCE STAPLE FEMALE - FEMALE SERIES ASHV01



PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASHV01-12-1	12	3/4	20	7220	500	150	45
ASHV01-16-1	16	1	25	5770	400	195	60
ASHV01-20-1	20	1.1/4	31	5075	350	195	70

Handle options: 3,5,6

HIGH PERFORMANCE STAPLE FEMALE - FEMALE SERIES ASHV01



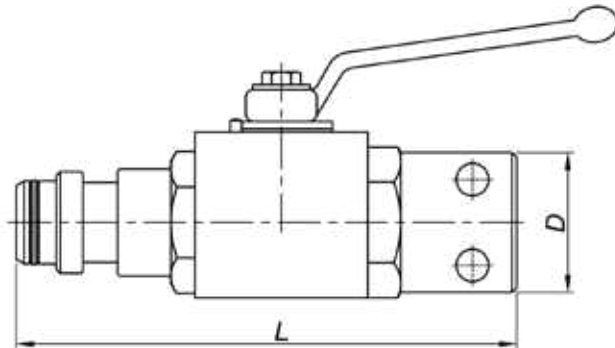
PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASHV01-24-1	24	1.1/2	38	5075	350	230	82
ASHV01-32-1	32	2	51	5075	350	260	95

Handle options: 1PL

STAPLE BALL VALVES

HIGH PERFORMANCE STAPLE MALE - FEMALE

SERIES ASHV31

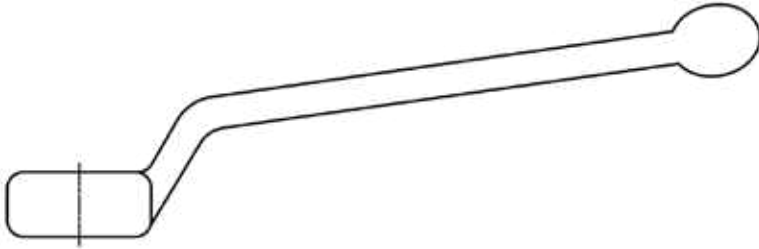


PART REF	NOMINAL BORE			PRESSURE		DIMENSIONS	
	DASH	INCH	DN	P.S.I.	BAR	L	D
ASHV31-12-1	12	3/4	20	7220	500	160	45
ASHV31-16-1	16	1	25	5770	400	205	60
ASHV31-20-1	20	1.1/4	31	5075	350	205	70

Handle options: 3,5,6

STAPLE BALL VALVES

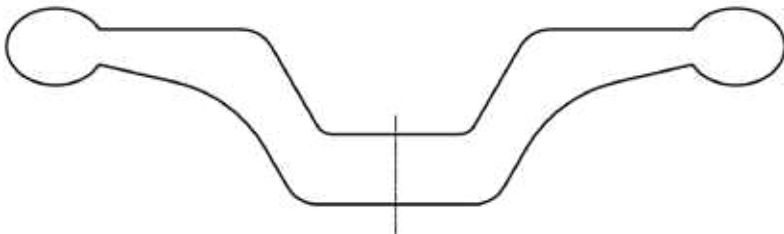
BALL VALVE HANDLE OPTIONS



HANDLE DESCRIPTION	PART REF	
SINGLE	-1	-1L (LONG)
	-1XL (EXTRA LONG)	-1 PL (PADLOCK)

COLOURED HANDLES AVAILABLE ON REQUEST

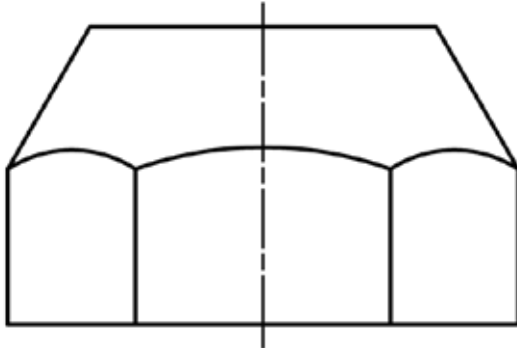
BALL VALVE HANDLE OPTIONS



HANDLE DESCRIPTION	PART REF
DOUBLE	-2

COLOURED HANDLES AVAILABLE ON REQUEST

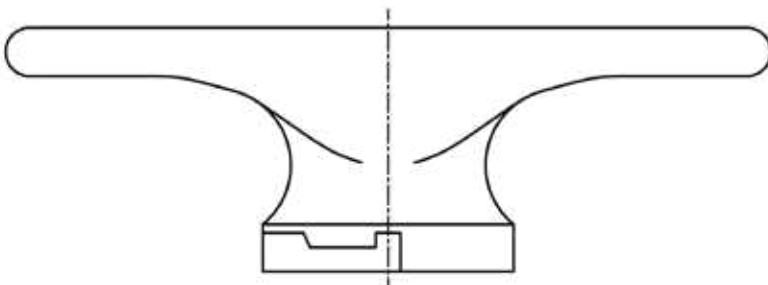
BALL VALVE HANDLE OPTIONS



HANDLE DESCRIPTION	PART REF
HEXAGON	-3

COLOURED HANDLES AVAILABLE ON REQUEST

BALL VALVE HANDLE OPTIONS



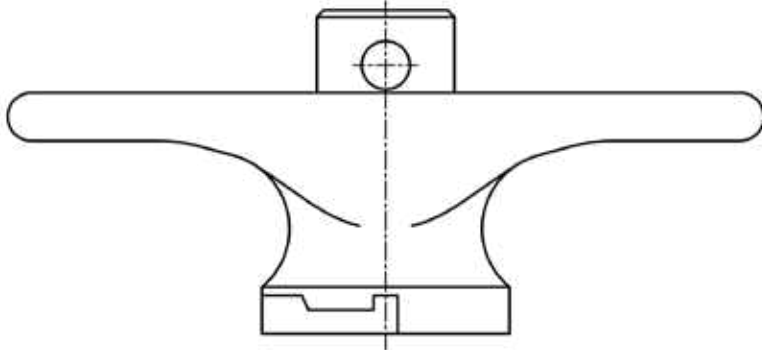
HANDLE DESCRIPTION	PART REF
SAFETY	-5

COLOURED HANDLES AVAILABLE ON REQUEST

All dimensions in mm

STAPLE BALL VALVES

BALL VALVE HANDLE OPTIONS



HANDLE DESCRIPTION	PART REF
SAFETY PADLOCK	-6

COLOURED HANDLES AVAILABLE ON REQUEST

Hydraulic Hoses for Mining Applications

With several ranges of hose designed specifically to meet the needs of the mining industry, Manuli Hydraulics achieves compliance with the requirements of some of the most stringent and demanding approvals bodies in the industry, including:

- MSHA (USA)
- MA (China)
- GOST-R (Russian)
- LOBA (Germany)
- Polish Safety "B"
- FRAS (Australia)
- MDG41 (Australia)
- DGMS (India)



CPH/2SC

CABLE PROTECTION HOSE



KEY FEATURES



- High flexibility
- Low weight
- High-tech manufacturing process
- Easy routing
- Blue flame retardant cover
- MSHA approval of the cover compound

APPLICATIONS & FLUIDS



- Cable protection hose for mining applications;

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01033010	10	- 6	3/8"	15.0	0.59	16.8	0.66	0	0	0	0	0	0.00	395	0.27	MF+M03400-06	OPF-06
H01033012	12	- 8	1/2"	18.5	0.73	20.3	0.80	0	0	0	0	0	0.00	495	0.33	MF+M03400-08	OPF-08
H01033019	19	- 12	3/4"	25.6	1.01	27.6	1.09	0	0	0	0	0	0.00	815	0.55	MF+M03400-12	OPF-12

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Blue synthetic rubber with high ozone and weather resistance

APPLICABLE SPECS

MANULI® Design

TYPE APPROVALS

MSHA; CU-TR

All dimensions in mm

DIAMONDSPIR



VERY HIGH PRESSURE

KEY FEATURES

- Very high pressure resistance
- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO Biological and mineral oils compatibility

APPLICATIONS & FLUIDS

- **Hydraulics:** heavy duty power lines, hydrostatic transmissions, in severe environmental conditions, specific installations with tough abrasion conditions, off-shore applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10018019	19	- 12	3/4"	29.1	1.15	32.1	1.26	560	8120	2240	32480	280	11.02	1660	1.12	XL+M01750-12	
H10018025	25	- 16	1"	38.2	1.50	41.2	1.62	560	8120	2240	32480	350	13.78	2910	1.96	XL+M01800-16	
H10018032	31	- 20	1.1/4"	47.7	1.88	50.9	2.00	525	7610	2100	30450	420	16.54	4210	2.83	XL+M01800-20	
H10018038	38	- 24	1.1/2"	55.2	2.17	58.7	2.31	475	6880	1900	27550	500	19.69	5230	3.51	XL+M01800-24	
H10018051	51	- 32	2"	68.4	2.69	71.9	2.83	420	6090	1680	24360	600	23.62	6680	4.49	XL+M01800-32	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Six high tensile steel spirals (DN 25÷76).

Four high tensile steel spirals (DN 19)

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

MANULI® Design; Exceed ISO 3862 R15

TYPE APPROVALS

ABS (DN 25÷76); FRAS; CU-TR; MSHA; MA

All unlabelled dimensions in mm

DIAMONDSPIR/14



HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE

KEY FEATURES

- Extreme abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic cover
- Superior pressure rating
- Structure robustness for tough handling
- InterLock robust fitting technology

APPLICATIONS & FLUIDS

- Medium pressure hydraulic lines with high flow rates, mine hydraulic return lines, large equipment hydraulics
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10104076	76	- 48	3"	87.8	3.46	92.2	3.63	140	2030	560	8120	700	27.56	5900	3.96	IP+M01500-48	

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four or six high tensile wire spirals

COVER

Synthetic rubber with high abrasion, ozone and weather resistance

APPLICABLE SPECS

Manuli Design, ISO 18752-C extension

TYPE APPROVALS

CU-TR; MSHA

DIAMONDSPIR/21




VERY HIGH HYDRAULIC POWER TRANSMISSION

KEY FEATURES

- Very high flow rates in high pressure hydraulics
- Extreme robustness of the hose structures
- Hose compact dimensions
- Approved with severe fatigue tests
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant (MSHA) and antistatic properties
- Biological and mineral oils compatibility
- Crimped InterLock Plus fittings structures

APPLICATIONS & FLUIDS

-  Hydraulics: heavy duty power lines, hydrostatic transmissions in severe environmental conditions, specific installations with tough abrasion conditions, off-shore applications, underground and open pit mining.
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10102063	63	- 40	2.1/2"	77.5	3.05	81.5	3.21	210	3040	840	12180	700	27.56	5890	3.96	IP+M01500-40	
H10102076	76	- 48	3"	90.8	3.57	94.6	3.72	210	3040	840	12180	900	35.43	7910	5.32	IP+M01810-48	

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four to six high tensile steel spirals

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

MANULI® Design: ISO 18752 grade C extension

TYPE APPROVALS

CU-TR; MSHA; MA

All unlabelled dimensions in mm

DIAMONDSPIR/35




VERY HIGH HYDRAULIC POWER TRANSMISSION

KEY FEATURES

- Very high flow rates in high pressure
- Extreme robustness of the hose structures
- Hose compact dimensions
- Approved with severe fatigue tests
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant (MSHA) and antistatic properties
- Biological and mineral oils compatibility
- Crimped InterLock Plus & InterLock Super fittings structures

APPLICATIONS & FLUIDS

-  Hydraulics: heavy duty power lines, hydrostatic transmissions in severe environmental conditions, specific installations with tough abrasion conditions, off-shore applications, underground and open pit mining.
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10103063	63	- 40	2.1/2"	80.6	3.17	84.8	3.34	350	5070	1400	20300	800	31.50	8105	5.45	IP+M01810-40	
H10103076	76	- 48	3"	97.9	3.85	101.9	4.01	350	5070	1400	20300	1000	39.37	12249	8.23	IS+M02700-48	IS+M02800-48

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Six to eight high tensile steel spirals

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

MANULI® Design: ISO 18752 grade C extension

TYPE APPROVALS

CU-TR; MSHA; MA

ETERNITY/2




HIGH SERVICE LIFE AND RELIABILITY

KEY FEATURES

- The Hi-Performance solution for toughest OEM specifications
- Performance far exceeds EN 857-2SC
- Extended service life and resistance to fatigue
- High temperature and environmental resistance
- Enhanced flex impulse resistance with M00120 skive ferrule

APPLICATIONS & FLUIDS

-  Hydraulics: high pressure lines with installation constraints in severe OEM applications
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01102006	6	- 4	1/4"	11.3	0.44	13.1	0.52	450	6520	1800	26100	45	1.77	275	0.18	MF+M00120-04	OPF-04
H01102008	8	- 5	5/16"	12.9	0.51	14.7	0.58	400	5800	1600	23200	55	2.17	325	0.22	MF+M00120-05	OPF-05
H01102010	10	- 6	3/8"	15.0	0.59	16.8	0.66	365	5290	1460	21170	65	2.56	390	0.26	MF+M00120-06	OPF-06
H01102A12	12	- 8	1/2"	18.6	0.73	20.4	0.80	350	5070	1400	20300	80	3.15	560	0.38	MF+M00120-08	OPF-08
H01102016	16	- 10	5/8"	22.7	0.89	24.7	0.97	300	4350	1200	17400	90	3.54	730	0.49	MF+M00120-10	
H01102019	19	- 12	3/4"	27.1	1.07	29.3	1.15	300	4350	1200	17400	120	4.72	1070	0.72	MF+M00120-12	OPK-12
H01102025	25	- 16	1"	33.7	1.33	35.9	1.41	225	3260	900	13050	160	6.30	1340	0.90	MF+M00120-16	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

135 °C, 275 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Synthetic rubber with high ozone, abrasion and weather resistance

APPLICABLE SPECS

Exceed EN 857 2SC; SAE 100R16; ISO 11237 2SC

TYPE APPROVALS

ABS; DNV-GL; DNV-GL (MED); CU-TR; FRAS; MSHA

All unlabelled dimensions in mm

FIREND

FIRE SUPPRESSION SYSTEMS



KEY FEATURES

- SAE 100R1AT and ISO-1SN rated working pressures
- Flame retardant red cover
- Excellent performance for standard hydraulic applications
- Embossed indelible branding
- No skive MF2000 (two-pieces) and MF3000 (one-piece) fittings

APPLICATIONS & FLUIDS

- Use in fire suppression systems of off-road vehicles, mining equipment, stationary engines. The hose present red cover for easy identification in the fire suppression system
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water, water based fire extinguishing agents

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01124006	6	- 4	1/4"	11.0	0.43	13.0	0.51	225	3260	900	13050	100	3.94	220	0.15	MF+M03400-04	OPF-04
H01124010	10	- 6	3/8"	15.0	0.59	17.0	0.67	180	2610	720	10440	127	5.00	325	0.22	MF+M03400-06	OPF-06
H01124012	12	- 8	1/2"	18.1	0.71	20.1	0.79	160	2320	640	9280	178	7.01	410	0.28	MF+M03400-08	OPF-08
H01124019	19	- 12	3/4"	25.3	1.00	27.9	1.10	105	1520	420	6090	240	9.45	660	0.44	MF+M03400-12	OPF-12
H01124025	25	- 16	1"	33.1	1.30	35.7	1.41	88	1270	350	5070	300	11.81	980	0.66	MF+M03400-16	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel wire braid

COVER

Red synthetic rubber with high ozone, abrasion and weather resistance

APPLICABLE SPECS

ISO 1436-1SN; SAE J517 type 100R1AT; EN 853-1SN

TYPE APPROVALS

MSHA; CU-TR

All dimensions in mm

GOLDENISO/21 ANTIWEAR



OUTSTANDING ABRASION RESISTANCE

KEY FEATURES

- Extreme abrasion resistance
- Very low bend radius to suit restricted space installations
- High robust and compact hose structure compared to rated pressure
- Approved at 200.000 impulse cycles, at T=100°C (ISO 18752 grade A)
- High environmental agents resistance
- Vacuum resistance accordingly to SAE 100R4 requirements

APPLICATIONS & FLUIDS

- Medium and high pressure hydraulic lines with installation constraints, pilot lines, return, drain and suction lines
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01125A05	5	- 3	3/16"	9.1	0.36	11.1	0.44	210	3040	840	12180	45	1.77	170	0.11	MF+M03300-03	OPF-03
H01125006	6	- 4	1/4"	10.2	0.40	12.0	0.47	210	3040	840	12180	50	1.97	180	0.12	MF+M03300-04	OPF-04
H01125008	8	- 5	5/16"	11.5	0.45	13.6	0.54	210	3040	840	12180	55	2.17	210	0.14	MF+M03300-05	OPF-05
H01125010	10	- 6	3/8"	14.4	0.57	16.2	0.64	210	3040	840	12180	65	2.56	300	0.20	MF+M03400-06	OPF-06
H01125012	12	- 8	1/2"	17.9	0.70	19.7	0.78	210	3040	840	12180	90	3.54	415	0.28	MF+M03400-08	OPF-08
H01125016	16	- 10	5/8"	22.2	0.87	24.0	0.94	210	3040	840	12180	100	3.94	620	0.42	MF+M03400-10	OPF-10
H01125019	19	- 12	3/4"	25.6	1.01	27.7	1.09	210	3040	840	12180	120	4.72	780	0.52	MF+M03400-12	OPF-12
H01125025	25	- 16	1"	33.0	1.30	35.2	1.39	210	3040	840	12180	150	5.91	1120	0.75	MF+M03400-16	OPF-16

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

121 °C, 250 °F

TUBE

Synthetic rubber

REINFORCEMENT

One wire braid (DN 5÷12). Two wire braid (DN 16÷25)

COVER

High abrasion resistant synthetic rubber

APPLICABLE SPECS

ISO 18752 grade A; SAE J517 type 100 R17; ISO 11237-R17

TYPE APPROVALS

CU-TR; MSHA; FRAS

All unlabelled dimensions in mm

GOLDENISO/28 ANTIWEAR

OUTSTANDING ABRASION RESISTANCE



KEY FEATURES

- Extreme abrasion resistance
- Very low bend radius to suit restricted space installations
- High robust and compact hose structure compared to rated pressure
- Approved at 200.000 impulse cycles, at T=100°C (ISO 18752 grade A)
- High environmental agents resistance
- Vacuum resistance accordingly to SAE 100R4 requirements

APPLICATIONS & FLUIDS

- Medium and high pressure hydraulic lines with installation constraints, pilot lines, return, drain and suction lines
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01126006	6	- 4	1/4"	11.6	0.46	13.2	0.52	280	4060	1120	16240	50	1.97	260	0.17	MF+M03400-04	OPF-04
H01126008	8	- 5	5/16"	12.9	0.51	14.5	0.57	280	4060	1120	16240	55	2.17	280	0.19	MF+M03400-05	OPF-05
H01126010	10	- 6	3/8"	15.4	0.61	17.0	0.67	280	4060	1120	16240	63	2.48	380	0.26	MF+M03400-06	OPF-06
H01126012	12	- 8	1/2"	18.5	0.73	20.3	0.80	280	4060	1120	16240	80	3.15	495	0.33	MF+M03400-08	OPF-08
H01126016	16	- 10	5/8"	22.7	0.89	24.7	0.97	280	4060	1120	16240	90	3.54	730	0.49	MF+M03400-10	OPF-10
H01126019	19	- 12	3/4"	27.1	1.07	29.3	1.15	280	4060	1120	16240	120	4.72	1060	0.71	MF+M03400-12	OPK-12

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Synthetic rubber

REINFORCEMENT

Two wire braids

COVER

High abrasion resistant synthetic rubber

APPLICABLE SPECS

ISO 18752 grade A; SAE J517 type 100R19

TYPE APPROVALS

CU-TR; MSHA; FRAS

GOLDENISO/21 XTRAFLEX



COMPACTNESS AND FLEXIBILITY

KEY FEATURES

- Bend radius which exceed the standard requirements by -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving vs traditional R12 hose construction, despite the higher working pressure of the GoldenIso Xtraflex range
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- Medium pressure hydraulic lines for general hydraulics
- Return lines of hydraulic systems
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10093031	31	- 20	1.1/4"	41.7	1.64	44.5	1.75	210	3040	840	12180	210	8.27	2071	1.39	MF+M00920-20	OPK-20
H10093038	38	- 24	1.1/2"	48.9	1.93	52.1	2.05	210	3040	840	12180	260	10.24	2989	2.01	IP+M01500-24	SP+M05400-24
H10093051	51	- 32	2"	63.2	2.49	66.8	2.63	210	3040	840	12180	330	12.99	4311	2.90	IP+M01500-32	SP+M05400-32

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

4 high tensile steel spirals

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

ISO 18752-C/D; JIS K6349-3

TYPE APPROVALS

CU-TR; MSHA; FRAS

All unlabelled dimensions in mm

GOLDENISO/28 XTRAFLEX



COMPACTNESS AND FLEXIBILITY

KEY FEATURES

- Bend radius which exceed the standard requirements by - 30% to -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving of 20% vs traditional R12 hose construction
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- High pressure power lines for general hydraulics
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10095010	10	- 6	3/8"	16.7	0.66	18.9	0.74	280	4060	1120	16240	65	2.56	520	0.35	MF+M00910-06	OPK-06
H10095012	12	- 8	1/2"	19.6	0.77	21.8	0.86	280	4060	1120	16240	90	3.54	650	0.44	MF+M00910-08	OPK-08
H10095016	16	- 10	5/8"	23.5	0.93	25.7	1.01	280	4060	1120	16240	100	3.94	934	0.63	MF+M00910-10	OPK-10
H10095019	19	- 12	3/4"	26.9	1.06	29.3	1.15	280	4060	1120	16240	120	4.72	1040	0.70	MF+M00920-12	OPK-12
H10095025	25	- 16	1"	34.1	1.34	36.5	1.44	280	4060	1120	16240	150	5.91	1530	1.03	MF+M00920-16	OPK-16
H10095031	31	- 20	1.1/4"	41.7	1.64	44.5	1.75	280	4060	1120	16240	210	8.27	2160	1.45	MF+M00920-20	OPK-20
H10095038	38	- 24	1.1/2"	48.9	1.93	52.1	2.05	280	4060	1120	16240	280	11.02	2994	2.01	IP+M01500-24	SP+M05400-24
H10095051	51	- 32	2"	63.9	2.52	67.5	2.66	280	4060	1120	16240	350	13.78	4633	3.11	IP+M01500-32	SP+M05400-32

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

4 high tensile steel spirals

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

ISO 18752-C/D; JIS K6349-3

TYPE APPROVALS

CU-TR; MSHA; FRAS

All dimensions in mm

GOLDENISO/35 XTRAFLEX



COMPACTNESS AND FLEXIBILITY

KEY FEATURES

- Bend radius which exceed the standard requirements by - 30% to -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving of 20% vs traditional R13 hose construction
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- High pressure power lines for general hydraulics
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10096010	10	- 6	3/8"	16.7	0.66	18.9	0.74	350	5070	1400	20300	80	3.15	530	0.36	MF+M00910-06	OPK-06
H10096012	12	- 8	1/2"	19.6	0.77	21.8	0.86	350	5070	1400	20300	90	3.54	660	0.44	MF+M00910-08	OPK-08
H10096016	16	- 10	5/8"	23.5	0.93	25.7	1.01	350	5070	1400	20300	100	3.94	934	0.63	MF+M00910-10	OPK-10
H10096019	19	- 12	3/4"	27.5	1.08	29.9	1.18	350	5070	1400	20300	120	4.72	1220	0.82	MF+M00920-12	OPK-12
H10096025	25	- 16	1"	34.6	1.36	37.0	1.46	350	5070	1400	20300	150	5.91	1800	1.21	IP+M01500-16	SP+M05400-16
H10096A25	25	- 16	1"	34.6	1.36	37.0	1.46	350	5070	1400	20300	150	5.91	1792	1.20	IP+M01500-16	SP+M05400-16
H10096031	31	- 20	1.1/4"	42.1	1.66	44.9	1.77	350	5070	1400	20300	230	9.06	2340	1.57	IP+M01500-20	SP+M05400-20
H10096038	38	- 24	1.1/2"	52.9	2.08	56.1	2.21	350	5070	1400	20300	300	11.81	4165	2.80	IP+M01600-24	SP+M05500-24
H10096051	51	- 32	2"	66.8	2.63	70.4	2.77	350	5070	1400	20300	360	14.17	6161	4.14	IP+M01800-32	SP+M05500-32

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals (DN 6÷31).

Six high tensile steel spirals (DN 38÷51).

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

ISO 18752-C/D, JIS K6349-3

TYPE APPROVALS

DNV-GL; CU-TR; MSHA; FRAS

All unlabelled dimensions in mm

GOLDENISO/42 XTRAFLEX



COMPACTNESS AND FLEXIBILITY

KEY FEATURES

- Bend radius which exceed the standard requirements by - 30% to -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving of 20% vs traditional R15 hose construction
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- High pressure power lines for general hydraulics
- Heavy duty power lines
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10097010	10	- 6	3/8"	17.6	0.69	20.0	0.79	420	6090	1680	24360	100	3.94	550	0.37	MF+M00910-06	
H10097012	12	- 8	1/2"	20.3	0.80	22.7	0.89	420	6090	1680	24360	120	4.72	807	0.54	MF+M00910-08	
H10097016	16	- 10	5/8"	23.9	0.94	26.4	1.04	420	6090	1680	24360	140	5.51	989	0.66	IP+M01500-10	
H10097019	19	- 12	3/4"	27.7	1.09	30.2	1.19	420	6090	1680	24360	150	5.91	1285	0.86	IP+M01500-12	SP+M05400-12
H10097025	25	- 16	1"	34.8	1.37	37.3	1.47	420	6090	1680	24360	210	8.27	1915	1.29	IP+M01500-16	SP+M05400-16
H10097031	31	- 20	1.1/4"	46.3	1.82	49.5	1.95	420	6090	1680	24360	260	10.24	3663	2.46	IP+M01600-20	SP+M05500-20
H10097038	38	- 24	1.1/2"	53.2	2.09	56.4	2.22	420	6090	1680	24360	310	12.20	4450	2.99	IP+M01600-24	SP+M05500-24

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals (DN 6÷25).

Six high tensile steel spirals (DN 31÷51).

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

ISO 18752-C (Grade C "Plus" approved 1 Mil impulse cycles with Interlock Plus fittings)

TYPE APPROVALS

CU-TR; MSHA; FRAS

All dimensions in mm

GOLDENISO/35 LONGLIFE



HIGH FATIGUE RESISTANCE

KEY FEATURES

- Designed for original equipment
- Long-term mission profile in severe applications
- Over standard pressure rating
- High impulse resistance exceeding the ISO 18752 requirements
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic properties of the cover
- Wide compatibility with hydraulic fluids, mineral and biodegradable oils
- Low bend radius, better than the standard requirements
- Skive robust fitting solution
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- Hydraulics: high pressure power lines, heavy duty earth moving equipment, drilling applications, lifting equipment and telescopic booms, injection moulding machines, specific installations with severe abrasion conditions and/or harsh environmental conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01134006	6	- 4	1/4"	11.3	0.44	13.1	0.52	350	5070	1800	26100	45	1.77	284	0.19	MF+M00120-04	OPF-04
H01134010	10	- 6	3/8"	15.0	0.59	16.8	0.66	350	5070	1400	20300	65	2.56	392	0.26	MF+M00120-06	
H01134012	12	- 8	1/2"	18.6	0.73	20.4	0.80	350	5070	1400	20300	80	3.15	551	0.37	MF+M00120-08	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids (DN 6 to 12)

COVER

Synthetic rubber with high ozone, abrasion and weather resistance

APPLICABLE SPECS

Manuli special design exceeds ISO 18752-C

TYPE APPROVALS

CU-TR; MSHA

All unlabelled dimensions in mm

GOLDENISO/38 LONGLIFE



HIGH FATIGUE RESISTANCE

KEY FEATURES

- Designed for original equipment
- Long-term mission profile in severe applications
- Over standard pressure rating
- High impulse resistance exceeding the ISO 18752 requirements
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic properties of the cover
- Wide compatibility with hydraulic fluids, mineral and biodegradable oils
- Low bend radius, better than the standard requirements
- Interlock-Plus easy mounting system for a very high-level robustness
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- Heavy duty pressure lines, hydrostatic transmissions, heavy duty earth moving equipment, hydraulic presses, drilling applications, injection moulding machines, specific installations with severe abrasion conditions and/or harsh environmental conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10098019	19	- 12	3/4"	27.7	1.09	32.0	1.26	380	5510	1680	24360	170	6.69	1410	0.95	IP+M01500-12	
H10098025	25	- 16	1"	34.8	1.37	38.1	1.50	380	5510	1680	24360	220	8.66	1964	1.32	IP+M01500-16	
H10098031	31	- 20	1.1/4"	46.3	1.82	49.5	1.95	380	5510	1680	24360	267	10.51	3663	2.46	IP+M01600-20	
H10098038	38	- 24	1.1/2"	55.2	2.17	59.1	2.33	380	5510	1900	27550	500	19.69	5280	3.55	IP+M01800-24	
H10098051	51	- 32	2"	68.4	2.69	72.4	2.85	380	5510	1520	22040	630	24.80	6796	4.57	IP+M01800-32	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel wire spirals (DN 19 & 25), six high tensile steel wire spirals (DN 31)

COVER

Synthetic rubber with high ozone, abrasion and weather resistance

APPLICABLE SPECS

Manuli special design exceeds SAE J517 type100R13; ISO 3862 R13; ISO 18752-C-D extension

TYPE APPROVALS

CU-TR; MSHA; FRAS

All dimensions in mm

GOLDENISO/45 LONGLIFE



HIGH FATIGUE RESISTANCE

KEY FEATURES

- Designed for original equipment
- Long-term mission profile in severe applications
- Over standard pressure rating
- High impulse resistance exceeding the ISO 18752 requirements
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic properties of the cover
- Wide compatibility with hydraulic fluids, mineral and biodegradable oils
- Low bend radius, better than the standard requirements
- Interlock-Plus easy mounting system for a very high-level robustness
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- Heavy duty pressure lines, hydrostatic transmissions, heavy duty earth moving equipment, hydraulic presses, drilling applications, injection moulding machines, specific installations with severe abrasion conditions and/or harsh environmental conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10089006	6	- 4	1/4"	14.7	0.58	17.1	0.67	460	6670	1840	26680	125	4.92	567	0.38	IP+M01500-04	
H10089016	16	- 10	5/8"	25.5	1.00	28.5	1.12	460	6670	1840	26680	250	9.84	1290	0.87	IP+M01500-10	
H10089019	19	- 12	3/4"	28.4	1.12	32.0	1.26	460	6670	1840	26680	280	11.02	1530	1.03	IP+M01500-12	
H10089025	25	- 16	1"	35.4	1.39	38.2	1.50	460	6670	1840	26680	340	13.39	2150	1.44	IP+M01500-16	
H10089031	31	- 20	1.1/4"	46.3	1.82	49.5	1.95	450	6520	1800	26100	420	16.54	3790	2.55	IP+M01800-20	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel wire spirals (DN 16÷25). Six high tensile steel wire spirals (DN 31)

COVER

Synthetic rubber with high ozone, abrasion and weather resistance

APPLICABLE SPECS

Manuli special design exceeds SAE J517 type100R15; ISO 3862 R15; ISO 18752-D extension

TYPE APPROVALS

CU-TR; MSHA; FRAS

All unlabelled dimensions in mm

GOLDENMINE


CHINA COAL MINE HYDRAULICS



KEY FEATURES

- Very high flow rates in high pressure
- Extreme robustness of the hose structures
- Hose compact dimensions
- Approved with severe fatigue tests
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant (MSHA) and antistatic properties
- Biological and mineral oils compatibility
- Crimped InterLock Plus & InterLock Super fittings structures

APPLICATIONS & FLUIDS

-  Hydraulics: heavy duty power lines in China coal mines, hydrostatic transmissions in severe environmental conditions, specific installations with tough abrasion conditions, underground and open pit mining.
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10116063	63	- 40	2.1/2"	80.6	3.17	84.8	3.34	350	5070	1400	20300	800	31.50	8105	5.45	IP+M01810-40	

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Six to eight high tensile steel spirals

COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

MT/T98

TYPE APPROVALS

MA China; MSHA; CU-TR

REMARKS:



- **REMARK:** The brand of the hose reports Allowable Working Pressure 50.0 MPa (500 bar) according to the China norm MT/T98.

All dimensions in mm

ROCKMASTER/1SN



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover

APPLICATIONS & FLUIDS

- Hydraulics: low-medium pressure lines, return lines, in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01007006	6	- 4	1/4"	11.0	0.43	13.0	0.51	225	3260	1000	14500	100	3.94	215	0.14	MF+M03400-04	OPF-04
H01007008	8	- 5	5/16"	12.6	0.50	14.6	0.57	215	3110	950	13770	114	4.49	260	0.17	MF+M03400-05	OPF-05
H01007010	10	- 6	3/8"	15.0	0.59	17.0	0.67	180	2610	800	11600	127	5.00	320	0.22	MF+M03400-06	OPF-06
H01007012	12	- 8	1/2"	18.1	0.71	20.1	0.79	160	2320	680	9860	178	7.01	400	0.27	MF+M03400-08	OPF-08
H01007016	16	- 10	5/8"	21.3	0.84	23.3	0.92	130	1880	600	8700	200	7.87	480	0.32	MF+M03400-10	OPF-10
H01007019	19	- 12	3/4"	25.3	1.00	27.3	1.07	105	1520	500	7250	240	9.45	600	0.40	MF+M03400-12	OPF-12
H01007025	25	- 16	1"	33.1	1.30	35.1	1.38	90	1300	360	5220	300	11.81	910	0.61	MF+M03400-16	OPF-16
H01007032	31	- 20	1.1/4"	40.6	1.60	43.3	1.70	65	940	260	3770	419	16.50	1243	0.84	MF+M03400-20	OPK-20
H01007040	38	- 24	1.1/2"	47.0	1.85	49.7	1.96	50	720	260	3770	500	19.69	1450	0.97	MF+M03400-24	OPK-24
H01007051	51	- 32	2"	60.4	2.38	63.1	2.48	40	580	250	3620	630	24.80	2050	1.38	MF+M03400-32	OPK-32
H01007060	60	- 38	2.3/8"	68.8	2.71	71.5	2.81	50	720	200	2900	650	25.59	2190	1.47	MF+M03400-38	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 853 1SN; SAE 100 R1AT; ISO 1436 1SN/R1AT

TYPE APPROVALS

ABS; BV; DNV-GL; DNV-GL MED (DN 5÷16); FRAS; CU-TR; MSHA; LR; NK; MA

All unlabelled dimensions in mm

ROCKMASTER/2SN

ABRASION, WEATHER & HEAT RESISTANCE



KEY FEATURES

- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Over standard pressure resistance

APPLICATIONS & FLUIDS

- Hydraulics: medium-high pressure lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01038006	6	- 4	1/4"	12.7	0.50	14.7	0.58	400	5800	1750	25380	50	1.97	365	0.25	MF+M03400-04	OPF-04
H01038008	8	- 5	5/16"	14.3	0.56	16.3	0.64	350	5070	1480	21460	60	2.36	405	0.27	MF+M03400-05	OPF-05
H01038010	10	- 6	3/8"	16.7	0.66	18.7	0.74	350	5070	1400	20300	70	2.76	530	0.36	MF+M03400-06	OPF-06
H01038012	12	- 8	1/2"	19.8	0.78	21.8	0.86	350	5070	1400	20300	89	3.50	650	0.44	MF+M03400-08	OPF-08
H01038016	16	- 10	5/8"	23.0	0.91	25.0	0.98	250	3620	1020	14790	100	3.94	720	0.48	MF+M03400-10	OPF-10
H01038019	19	- 12	3/4"	27.0	1.06	29.0	1.14	215	3110	900	13050	130	5.12	930	0.62	MF+M03400-12	OPF-12
H01038025	25	- 16	1"	34.8	1.37	36.8	1.45	175	2530	670	9710	160	6.30	1290	0.87	MF+M03400-16	OPF-16
H01038032	31	- 20	1.1/4"	44.3	1.74	47.0	1.85	140	2030	600	8700	419	16.50	1930	1.30	MF+M03400-20	OPK-20
H01038040	38	- 24	1.1/2"	50.7	2.00	53.4	2.10	100	1450	500	7250	500	19.69	2262	1.52	MF+M03400-24	OPK-24
H01038051	51	- 32	2"	63.5	2.50	66.2	2.61	90	1300	420	6090	630	24.80	2880	1.94	MF+M03400-32	OPK-32
H01038060	60	- 38	2.3/8"	68.8	2.71	71.5	2.81	90	1300	360	5220	650	25.59	2670	1.79	MF+M03400-38	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 853 2SN; SAE 100 R2AT; ISO 1436 2SN/R2AT

TYPE APPROVALS

ABS; BV; DNV-GL; DNV-GL MED (DN 5÷16); LR; FRAS; CU-TR; MSHA; RINA (DN 38÷51); B (DN 6÷60); NK; MA; DIN 5510-2

ROCKMASTER/2ST



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- High robustness of the cover for mining applications and tough handling
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Over standard pressure resistance

APPLICATIONS & FLUIDS

- Hydraulics: medium-high pressure lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01035005	5	- 3	3/16"	11.3	0.44	15.6	0.61	415	6010	2000	29000	89	3.50	385	0.26	MF+M00910-03	
H01035006	6	- 4	1/4"	12.7	0.50	17.2	0.68	400	5800	1750	25380	100	3.94	450	0.30	MF+M00910-04	
H01035008	8	- 5	5/16"	14.3	0.56	18.9	0.74	350	5070	1480	21460	114	4.49	500	0.34	MF+M00910-05	
H01035010	10	- 6	3/8"	16.7	0.66	21.3	0.84	350	5070	1400	20300	127	5.00	640	0.43	MF+M00910-06	
H01035012	12	- 8	1/2"	19.8	0.78	24.5	0.96	350	5070	1400	20300	178	7.01	790	0.53	MF+M00910-08	
H01035016	16	- 10	5/8"	23.0	0.91	27.7	1.09	250	3620	1020	14790	200	7.87	870	0.58	MF+M00910-10	
H01035019	19	- 12	3/4"	27.0	1.06	31.6	1.24	215	3110	900	13050	240	9.45	1100	0.74	MF+M00920-12	
H01035025	25	- 16	1"	34.8	1.37	39.5	1.56	175	2530	670	9710	300	11.81	1510	1.01	MF+M00920-16	
H01035032	31	- 20	1.1/4"	44.3	1.74	50.6	1.99	140	2030	600	8700	419	16.50	2310	1.55	MF+M00920-20	
H01035040	38	- 24	1.1/2"	50.7	2.00	57.0	2.24	100	1450	500	7250	500	19.69	2683	1.80	MF+M00910-24	
H01035051	51	- 32	2"	63.5	2.50	69.8	2.75	90	1300	420	6090	630	24.80	3410	2.29	MF+M00910-32	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 853 2ST; SAE 100 R2A; ISO 1436 2ST/R2A

TYPE APPROVALS

BV; CU-TR; LR; B (DN 6-51); MSHA; FRAS

All unlabelled dimensions in mm

ROCKMASTER/2 PLUS

ABRASION, WEATHER & HEAT RESISTANCE



KEY FEATURES

- Superior pressure rating
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Robustness thanks to skive fittings solution

APPLICATIONS & FLUIDS

- Hydraulics: high pressure lines with installation constraints in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01101006	6	- 4	1/4"	11.3	0.44	13.1	0.52	450	6520	1800	26100	45	1.77	275	0.18	MF+M03400-04	
H01101010	10	- 6	3/8"	16.7	0.66	18.5	0.73	400	5800	1600	23200	127	5.00	520	0.35	MF+M00910-06	
H01101012	12	- 8	1/2"	20.1	0.79	22.1	0.87	362	5250	1450	21030	150	5.91	700	0.47	MF+M00910-08	
H01101016	16	- 10	5/8"	23.2	0.91	25.2	0.99	340	4930	1360	19720	200	7.87	860	0.58	MF+M00910-10	
H01101019	19	- 12	3/4"	27.1	1.07	29.3	1.15	310	4490	1240	17980	230	9.06	1060	0.71	MF+M00920-12	OPK-12
H01101025	25	- 16	1"	35.1	1.38	37.8	1.49	240	3480	960	13920	300	11.81	1570	1.06	MF+M00920-16	OPK-16
H01101032	31	- 20	1.1/4"	44.5	1.75	47.2	1.86	175	2530	700	10150	380	14.96	2120	1.42	MF+M00920-20	OPK-20
H01101038	38	- 24	1.1/2"	51.0	2.01	53.7	2.11	146	2110	584	8470	450	17.72	2460	1.65	MF+M00910-24	
H01101051	51	- 32	2"	62.8	2.47	65.5	2.58	130	1880	530	7680	600	23.62	3090	2.08	MF+M00910-32	
H01101076	76	- 48	3"	87.8	3.46	91.4	3.60	70	1010	280	4060	500	19.69	4290	2.88	MF+M03400-48	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

MANULI® Design: Exceed ISO 1436-2SN; EN 853-2SN; SAE J517 type 100R2AT. Performance BCS 174; ISO 6805 type 4

TYPE APPROVALS

BV; DNV-GL; CU-TR; LR; MA (except DN 76); MSHA; FRAS

All dimensions in mm

ROCKMASTER/2 PLUS SUPER-AW



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Superior pressure rating
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Robustness thanks to skive fittings solution

APPLICATIONS & FLUIDS

- Hydraulics: high pressure lines with installation constraints in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01139006*	6	- 4	1/4"	11.3	0.44	13.1	0.52	450	6520	1800	26100	45	1.77	269	0.18	MF+M03400-04	
H01139010*	10	- 6	3/8"	16.7	0.66	18.5	0.73	400	5800	1600	23200	127	5.00	518	0.35	MF+M00910-06	OPK-06
H01139012*	12	- 8	1/2"	20.1	0.79	22.1	0.87	362	5250	1450	21030	150	5.91	683	0.46	MF+M00910-08	OPK-08
H01139016*	16	- 10	5/8"	23.2	0.91	25.2	0.99	340	4930	1360	19720	200	7.87	833	0.56	MF+M00910-10	OPK-10
H01139019*	19	- 12	3/4"	27.1	1.07	29.3	1.15	310	4490	1240	17980	230	9.06	1034	0.69	MF+M00920-12	OPK-12
H01139025*	25	- 16	1"	35.1	1.38	37.8	1.49	240	3480	960	13920	300	11.81	1531	1.03	MF+M00930-16	OPK-16

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

MANULI® Design: Exceed ISO 1436-2SN; EN 853-2SN; SAE J517 type 100R2AT. Performance BCS 174; ISO 6805 type 4

TYPE APPROVALS

BV; DNV-GL; CU-TR; LR; MA (except DN 76); MSHA; FRAS

All unlabelled dimensions in mm

ROCKMASTER/1SC




ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Compact and flexible one wire braid hose line
- High temperature resistance for the most severe service and OEM applications
- Working pressure exceeds 1SC standards
- Superior protection with ROCKMASTER® cover compound
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Vacuum resistance with SAE 100 R4 performance approved on sizes up to DN 31

APPLICATIONS & FLUIDS

-  Hydraulics: low-medium pressure lines with installation constraints in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01108006	6	- 4	1/4"	10.2	0.40	12.0	0.47	260	3770	1050	15220	50	1.97	180	0.12	MF+M00120-04	
H01108008	8	- 5	5/16"	11.5	0.45	13.6	0.54	250	3620	1000	14500	55	2.17	210	0.14	MF+M00120-05	
H01108010	10	- 6	3/8"	13.6	0.54	15.5	0.61	225	3260	900	13050	60	2.36	255	0.17	MF+M00120-06	
H01108012	12	- 8	1/2"	17.3	0.68	19.1	0.75	190	2750	760	11020	70	2.76	355	0.24	MF+M00820-08	
H01108016	16	- 10	5/8"	20.6	0.81	22.4	0.88	150	2170	600	8700	90	3.54	430	0.29	MF+M00820-10	
H01108019	19	- 12	3/4"	23.9	0.94	25.9	1.02	150	2170	600	8700	100	3.94	520	0.35	MF+M00820-12	
H01108025	25	- 16	1"	31.3	1.23	33.1	1.30	110	1590	440	6380	160	6.30	730	0.49	MF+M00820-16	
H01108031	31	- 20	1.1/4"	38.4	1.51	40.9	1.61	75	1080	300	4350	210	8.27	1040	0.70	MF+M00820-20	
H01108038	38	- 24	1.1/2"	45.0	1.77	47.5	1.87	50	720	200	2900	300	11.81	1170	0.79	MF+M00820-24	
H01108051	51	- 32	2"	58.0	2.28	60.5	2.38	50	720	200	2900	400	15.75	1560	1.05	MF+M00820-32	
H01108063	63	- 40	2.1/2"	70.5	2.78	73.0	2.87	50	720	200	2900	760	29.92	2090	1.40	MF+M03400-40	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 857 1SC; ISO 11237 1SC

TYPE APPROVALS

CU-TR; LR; MSHA; FRAS

All dimensions in mm

ROCKMASTER/2SC




ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Compactness and flexibility
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Working pressure improvement
- Range extension to DN 76
- Vacuum resistance with SAE 100 R4 performance approved on sizes up to DN 76

APPLICATIONS & FLUIDS

-  Hydraulics: medium-high pressure lines with installation constraints in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining, return and suction lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01030005	5	- 3	3/16"	9.7	0.38	11.5	0.45	420	6090	2000	29000	40	1.57	220	0.15	MF+M03400-03	OPF-03
H01030006	6	- 4	1/4"	11.3	0.44	13.1	0.52	400	5800	1850	26830	45	1.77	275	0.18	MF+M03400-04	OPF-04
H01030008	8	- 5	5/16"	12.9	0.51	14.7	0.58	350	5070	1700	24650	55	2.17	325	0.22	MF+M03400-05	OPF-05
H01030010	10	- 6	3/8"	15.0	0.59	16.8	0.66	330	4780	1500	21750	65	2.56	390	0.26	MF+M03400-06	OPF-06
H01030012	12	- 8	1/2"	18.5	0.73	20.3	0.80	275	3980	1220	17690	80	3.15	500	0.34	MF+M03400-08	OPF-08
H01030016	16	- 10	5/8"	21.8	0.86	23.6	0.93	250	3620	1050	15220	90	3.54	620	0.42	MF+M03400-10	OPF-10
H01030019	19	- 12	3/4"	25.6	1.01	27.6	1.09	245	3550	980	14210	120	4.72	790	0.53	MF+M03400-12	OPF-12
H01030025	25	- 16	1"	33.0	1.30	35.2	1.39	210	3040	840	12180	150	5.91	1180	0.79	MF+M03400-16	OPF-16
H01030031	31	- 20	1.1/4"	41.1	1.62	43.6	1.72	140	2030	560	8120	250	9.84	1550	1.04	MF+M03400-20	OPK-20
H01030038	38	- 24	1.1/2"	47.7	1.88	50.7	2.00	100	1450	400	5800	300	11.81	1880	1.26	MF+M03400-24	OPK-24
H01030051	51	- 32	2"	60.4	2.38	63.4	2.50	90	1300	360	5220	400	15.75	2430	1.63	MF+M03400-32	OPK-32
H01030063	63	- 40	2.1/2"	73.0	2.87	76.0	2.99	70	1010	300	4350	760	29.92	2900	1.95	MF+M03400-40	
H01030076	76	- 48	3"	87.8	3.46	90.5	3.56	45	650	180	2610	900	35.43	3120	2.10	MF+M03400-48	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 857 2SC; ISO 11237 2SC; SAE 100 R16. In addition: DN 25 SAE 100 R17; ISO 11237 R17

TYPE APPROVALS

ABS; BV; DNV-GL; CU-TR; LR; MA; MSHA; RINA (DN 6÷31); B (DN 8÷25); FRAS

All unlabelled dimensions in mm

ROCKMASTER/4SP



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Upgraded temperature resistance
- BIO biological and mineral oils compatibility

APPLICATIONS & FLUIDS

- Hydraulics: very high pressure power lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10008006	6	- 4	1/4"	14.7	0.58	17.6	0.69	485	7030	2400	34800	125	4.92	590	0.40	MF+M00910-04	
H10008010	10	- 6	3/8"	17.6	0.69	21.0	0.83	450	6520	2000	29000	125	4.92	740	0.50	MF+M00910-06	
H10008012	12	- 8	1/2"	20.3	0.80	24.2	0.95	420	6090	1750	25380	175	6.89	880	0.59	MF+M00910-08	
H10008016	16	- 10	5/8"	23.7	0.93	27.6	1.09	380	5510	1600	23200	200	7.87	1080	0.73	MF+M00910-10	
H10008019	19	- 12	3/4"	28.2	1.11	31.7	1.25	380	5510	1600	23200	240	9.45	1450	0.97	MF+M00920-12	SP+M05400-12
H10008025	25	- 16	1"	35.0	1.38	39.0	1.54	320	4640	1400	20300	340	13.39	1880	1.26	MF+M00920-16	SP+M05400-16
H10008032	31	- 20	1.1/4"	46.1	1.81	49.7	1.96	210	3040	1250	18120	460	18.11	2990	2.01	MF+M00920-20	SP+M05500-20
H10008038	38	- 24	1.1/2"	52.4	2.06	56.1	2.21	185	2680	1000	14500	560	22.05	3500	2.35	MF+M00910-24	SP+M05500-24
H10008051	51	- 32	2"	65.4	2.57	69.0	2.72	175	2530	1000	14500	660	25.98	5010	3.37	MF+M00910-32	SP+M05400-32

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 856 4SP; ISO 3862 4SP;
DN 16 & 19: thin cover style, exceeding performance EN 856 4SP and ISO 3862 4SP

TYPE APPROVALS

ABS; DNV-GL; DNV-GL (MED); BV; FRAS;
CU-TR; MA; MSHA; RINA (DN 6÷16); B;
LR; NK

REMARKS:



- If service temperature is lower than 212°F/100°C, Rockmaster/4SP can be used with reduced Min. Bend Radius for small sizes (DN6 100mm, DN10 110mm, DN12 120mm, DN16 140mm, DN19 170mm).

All dimensions in mm

ROCKMASTER/4SH



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Upgraded temperature resistance
- BIO biological and mineral oils compatibility

APPLICATIONS & FLUIDS

- Hydraulics: very high pressure power lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10044016	16	- 10	5/8"	25.5	1.00	28.5	1.12	450	6520	1850	26830	180	7.09	1290	0.87	IP+M01500-10	
H10044019	19	- 12	3/4"	28.2	1.11	31.9	1.26	420	6090	1750	25380	210	8.27	1500	1.01	IP+M01500-12	SP+M05400-12
H10044025	25	- 16	1"	35.1	1.38	38.1	1.50	385	5580	1750	25380	220	8.66	2040	1.37	IP+M01500-16	SP+M05400-16
H10044032	31	- 20	1.1/4"	42.2	1.66	45.0	1.77	350	5070	1400	20300	420	16.54	2410	1.62	IP+M01500-20	SP+M05400-20
H10044038	38	- 24	1.1/2"	49.1	1.93	53.1	2.09	300	4350	1250	18120	560	22.05	3170	2.13	IP+M01500-24	SP+M05400-24
H10044051	51	- 32	2"	63.5	2.50	67.5	2.66	250	3620	1000	14500	700	27.56	4460	3.00	IP+M01500-32	SP+M05400-32

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 856 4SH; ISO 3862 4SH

TYPE APPROVALS

ABS; DNV-GL; DNV-GL (MED); BV; FRAS; CU-TR; LR; MA; MSHA; B (DN 16÷51); RINA; NK

All unlabelled dimensions in mm

ROCKMASTER/12



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO biological and mineral oils compatibility

APPLICATIONS & FLUIDS

- Hydraulics: high pressure power lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10031010	10	- 6	3/8"	17.3	0.68	20.0	0.79	280	4060	1600	23200	100	3.94	620	0.42	MF+M00910-06	OPK-06
H10031012	12	- 8	1/2"	20.4	0.80	23.5	0.93	280	4060	1350	19580	125	4.92	760	0.51	MF+M00910-08	OPK-08
H10031016	16	- 10	5/8"	24.4	0.96	27.1	1.07	280	4060	1300	18850	140	5.51	990	0.67	MF+M00910-10	OPK-10
H10031019	19	- 12	3/4"	27.4	1.08	30.4	1.20	280	4060	1300	18850	150	5.91	1160	0.78	MF+M00920-12	OPK-12
H10031025	25	- 16	1"	35.0	1.38	37.6	1.48	280	4060	1150	16670	225	8.86	1740	1.17	MF+M00920-16	OPK-16
H10031A32	31	- 20	1.1/4"	43.1	1.70	45.9	1.81	210	3040	1000	14500	250	9.84	2280	1.53	MF+M00920-20	OPK-20
H10031040	38	- 24	1.1/2"	50.0	1.97	53.3	2.10	175	2530	1000	14500	500	19.69	3130	2.10	MF+M00910-24	OPK-24
H10031051	51	- 32	2"	63.6	2.50	66.7	2.63	175	2530	800	11600	630	24.80	4440	2.98	MF+M00910-32	OPK-32

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 856 R12; SAE 100 R12; ISO 3862 R12

TYPE APPROVALS

ABS; BV; BV (MED); FRAS; CU-TR; LR; MA; MSHA; NK

ROCKMASTER/13



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO biological and mineral oils compatibility

APPLICATIONS & FLUIDS

- Hydraulics: heavy duty power lines, hydrostatic transmissions, severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10035A06	6	- 4	1/4"	14.6	0.57	17.6	0.69	690	10000	3250	47130	120	4.72	660	0.44		
H10035A10	10	- 6	3/8"	17.4	0.69	20.4	0.80	690	10000	2900	42060	150	5.91	830	0.56		
H10035A12	12	- 8	1/2"	21.5	0.85	24.5	0.96	620	8990	2500	36250	200	7.87	1140	0.77		
H10035019	19	- 12	3/4"	29.0	1.14	31.8	1.25	350	5070	1950	28280	240	9.45	1630	1.10	IP+M01500-12	SP+M05400-12
H10035025	25	- 16	1"	36.0	1.42	39.2	1.54	350	5070	1650	23930	300	11.81	2190	1.47	IP+M01500-16	SP+M05400-16
H10035032	31	- 20	1.1/4"	47.0	1.85	50.0	1.97	350	5070	1500	21750	420	16.54	3600	2.42	IP+M01600-20	SP+M05500-20
H10035040	38	- 24	1.1/2"	54.6	2.15	57.5	2.26	350	5070	1600	23200	500	19.69	4700	3.16	IP+M01600-24	SP+M05500-24
H10035051	51	- 32	2"	68.4	2.69	72.0	2.83	350	5070	1500	21750	630	24.80	6800	4.57	IP+M01800-32	SP+M05500-32

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals (DN 6÷25).
Six high tensile steel spirals (DN 31÷51)

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed EN 856 R13; SAE 100 R13; ISO 3862 R13

TYPE APPROVALS

ABS (DN 19÷51); BV (DN 19÷51); DNV-GL; BV MED (DN 19÷51); FRAS; LR; CU-TR; MA; MSHA; RINA (DN 38÷51); B (DN 19÷51)

All unlabelled dimensions in mm

ROCKMASTER/15



ABRASION, WEATHER & HEAT RESISTANCE

KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO biological and mineral oils compatibility

APPLICATIONS & FLUIDS

- Hydraulics: heavy duty power lines, hydrostatic transmissions, in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10049019	19	- 12	3/4"	28.2	1.11	31.0	1.22	420	6090	1750	25380	265	10.43	1440	0.97	IP+M01500-12	SP+M05400-12
H10049025	25	- 16	1"	35.1	1.38	38.1	1.50	420	6090	1750	25380	267	10.51	2040	1.37	IP+M01500-16	SP+M05400-16
H10049A32	31	- 20	1.1/4"	46.3	1.82	49.5	1.95	420	6090	1680	24360	267	10.51	3660	2.46	IP+M01600-20	SP+M05500-20
H10049040	38	- 24	1.1/2"	54.6	2.15	57.5	2.26	420	6090	1680	24360	315	12.40	4700	3.16	IP+M01600-24	SP+M05500-24

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals (DN 19 ÷ 25). Six high tensile steel spirals (DN 31 ÷ 38)

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Exceed SAE 100 R15; ISO 3862 R15

TYPE APPROVALS

ABS; BV; BV (MED); DNV-GL; FRAS; CU-TR; LR; MA; MSHA; B (DN 38)

All dimensions in mm

SHIELDMASTER/2 PLUS MINE



OUTSTANDING ABRASION RESISTANCE, MSHA APPROVED

KEY FEATURES

- MSHA approved composite cover for mining applications
- Outstanding abrasion and ozone resistance
- Easy assembling and mounting operations, no protection sleeves are required
- Indelible branding technology
- Reduced bend radius for difficult installations
- Flame retardant and electrical antistaticity cover properties

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe mining environments, underground and open pit, long resistance to ozone and weathering, cold temperatures, antistatic and flame retardant properties of the cover
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01122006	6	- 4	1/4"	11.3	0.44	12.7	0.50	450	6520	1800	26100	45	1.77	285	0.19	MF+M03400-04	
H01122008	8	- 5	5/16"	12.9	0.51	14.3	0.56	400	5800	1600	23200	85	3.35	330	0.22	MF+M00120-05	
H01122010	10	- 6	3/8"	16.7	0.66	18.5	0.73	400	5800	1600	23200	127	5.00	549	0.37	MF+M00910-06	
H01122012	12	- 8	1/2"	20.1	0.79	22.1	0.87	362	5250	1450	21030	150	5.91	710	0.48	MF+M00910-08	
H01122019	19	- 12	3/4"	27.1	1.07	29.3	1.15	310	4490	1240	17980	230	9.06	1090	0.73	MF+M00920-12	OPK-12
H01122025	25	- 16	1"	35.1	1.38	37.8	1.49	240	3480	960	13920	300	11.81	1610	1.08	MF+M00920-16	OPK-16
H01122031	31	- 20	1.1/4"	44.5	1.75	47.2	1.86	175	2530	700	10150	380	14.96	2170	1.46	MF+M00920-20	OPK-20
H01122038	38	- 24	1.1/2"	51.0	2.01	53.7	2.11	146	2110	584	8470	450	17.72	2520	1.69	MF+M00910-24	
H01122051	51	- 32	2"	62.8	2.47	65.5	2.58	130	1880	520	7540	600	23.62	3170	2.13	MF+M00910-32	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two wire braids of high tensile steel wire

COVER

Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS

EN 853 type 2SN; ISO 1436 2SN; SAE J517 100R2AT. Exceed performances of: BCS 174 (British Coal Specification &92); ISO 6805 type 4 (Rubber hoses and hose assemblies for underground mining)

TYPE APPROVALS

MSHA; CU-TR

REMARKS:



- Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

All unlabelled dimensions in mm

SHIELDMASTER/5000 MINE



OUTSTANDING ABRASION RESISTANCE, MSHA APPROVED

KEY FEATURES

- MSHA approved cover for mining applications
- Outstanding abrasion and ozone resistance
- Compact overall dimensions
- Easy assembling and mounting operations (no protection sleeves required)
- Indelible branding technology

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe mining environments, underground and open pit, long resistance to ozone and weathering, cold temperatures, antistatic and flame retardant properties of the cover
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01104006	6	- 4	1/4"	11.6	0.46	13.6	0.54	345	5000	1380	20010	50	1.97	280	0.19	MF+M00120-04	OPF-04
H01104008	8	- 5	5/16"	12.9	0.51	15.1	0.59	345	5000	1380	20010	55	2.17	350	0.24	MF+M00120-05	OPF-05
H01104010	10	- 6	3/8"	15.0	0.59	17.2	0.68	345	5000	1380	20010	65	2.56	410	0.28	MF+M00120-06	OPF-06
H01104012	12	- 8	1/2"	19.8	0.78	22.2	0.87	345	5000	1380	20010	120	4.72	670	0.45	MF+M00910-08	OPF-08
H01104016	16	- 10	5/8"	24.4	0.96	27.2	1.07	345	5000	1380	20010	200	7.87	1030	0.69	MF+M00910-10	OPK-10
H01104019	19	- 12	3/4"	28.2	1.11	31.2	1.23	345	5000	1380	20010	230	9.06	1420	0.95	IP+M01500-12	SP+M05400-12
H01104025	25	- 16	1"	35.1	1.38	38.1	1.50	345	5000	1380	20010	267	10.51	1990	1.34	IP+M01500-16	SP+M05400-16
H01104031	31	- 20	1.1/4"	42.2	1.66	45.2	1.78	345	5000	1380	20010	350	13.78	2500	1.68	IP+M01500-20	SP+M05500-20

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids (DN 6÷12).
Four high tensile steel spirals (DN 16÷31)

COVER

Composite bi-layer structure with outstanding abrasion resistance

APPLICABLE SPECS

MANULI® Design. Performances ISO 3862 - R13

TYPE APPROVALS

CU-TR; MSHA; FRAS

REMARKS:



- Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

All dimensions in mm

SHIELDMASTER/6000 MINE



OUTSTANDING ABRASION RESISTANCE, MSHA APPROVED

KEY FEATURES

- MSHA approved composite cover for mining applications
- Outstanding abrasion and ozone resistance
- Easy assembling and mounting operations, no protection sleeves are required
- Indelible branding technology
- Reduced bend radius for difficult installations
- Flame retardant and electrical antistaticity cover properties

APPLICATIONS & FLUIDS

- Heavy duty hydraulic power lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe mining environments, underground and open pit, long resistance to ozone and weathering, cold temperatures, antistatic and flame retardant properties of the cover
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10086031	31	- 20	1.1/4"	46.3	1.82	49.5	1.95	420	6090	1680	24360	260	10.24	3760	2.53	IP+M01600-20	SP+M05500-20
H10086038	38	- 24	1.1/2"	54.6	2.15	57.8	2.28	420	6090	1680	24360	310	12.20	4850	3.26	IP+M01600-24	SP+M05500-24
H10086051	51	- 32	2"	68.4	2.69	72.0	2.83	420	6090	1680	24360	600	23.62	6860	4.61	XL+M01800-32	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Six high tensile steel wire spirals

COVER

Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS

ISO 3862 type R15; SAE J517 type 100 R15; exceed performances of BCS 174 (British Coal Specification 1992); ISO 6805 type 6 (rubber hoses and hose assemblies for underground mining)

TYPE APPROVALS

MSHA, CU-TR; FRAS

REMARKS:



- Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

All unlabelled dimensions in mm

SHIELDMASTER/21



OUTSTANDING WEAR RESISTANCE

KEY FEATURES



- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius make the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS



- Low, medium pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, easy cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01154006*	6	- 4	1/4"	10.2	0.40	12.2	0.48	210	3040	840	12180	50	1.97	188	0.13	MF+M00120-04	OPF-04
H01154008*	8	- 5	5/16"	11.5	0.45	13.6	0.54	210	3040	840	12180	55	2.17	212	0.14	MF+M00120-05	OPF-05

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid (DN 6-8)

COVER

Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS

ISO 18752 Grade B

TYPE APPROVALS

MSHA, FRAS (requested)

REMARKS:



- Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

All dimensions in mm

SHIELDMASTER/28



OUTSTANDING WEAR RESISTANCE

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius makes the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- Medium and high pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01155008*	8	- 5	5/16"	12.9	0.51	14.9	0.59	280	4060	1120	16240	55	2.17	299	0.20	MF+M00120-05	OPF-05
H01155010*	10	- 6	3/8"	15.4	0.61	17.4	0.69	280	4060	1120	16240	63	2.48	397	0.27	MF+M00120-06	OPF-06
H01155012*	12	- 8	1/2"	18.5	0.73	20.5	0.81	280	4060	1120	16240	80	3.15	507	0.34	MF+M00120-08	OPF-08
H01155019*	19	- 12	3/4"	27.1	1.07	29.3	1.15	280	4060	1120	16240	120	4.72	1058	0.71	MF+M00120-12	OPF-12
H01155025*	25	- 16	1"	34.1	1.34	36.5	1.44	280	4060	1120	16240	150	5.91	1536	1.03	MF+M00930-16	OPF-16

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids (DN 8÷19).

Four high tensile steel spirals (DN 25).

COVER

Composite bi-layer structure with outstanding abrasion resistance

APPLICABLE SPECS

ISO 18752 Grade B

TYPE APPROVALS

MSHA, FRAS (requested)

REMARKS:



- Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

All unlabelled dimensions in mm

SHIELDMASTER/35



OUTSTANDING WEAR RESISTANCE

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius makes the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H0119006*	6	- 4	1/4"	11.3	0.44	13.1	0.52	350	5070	1400	20300	45	1.77	288	0.19	MF+M00120-04	OPF-04
H0119008*	8	- 5	5/16"	12.9	0.51	14.9	0.59	350	5070	1400	20300	55	2.17	330	0.22	MF+M00120-05	OPF-05
H0119010*	10	- 6	3/8"	15.0	0.59	16.8	0.66	350	5070	1400	20300	65	2.56	393	0.26	MF+M00120-06	OPF-06
H0119012*	12	- 8	1/2"	18.6	0.73	20.4	0.80	350	5070	1400	20300	80	3.15	556	0.37	MF+M00120-08	OPK-08
H0119016*	16	- 10	5/8"	23.5	0.93	25.9	1.02	350	5070	1400	20300	100	3.94	964	0.65	MF+M00120-10	OPK-10
H0119019*	19	- 12	3/4"	27.5	1.08	29.9	1.18	350	5070	1400	20300	120	4.72	1229	0.83	IP+M01500-12	SP+M05400-12
H0119025*	25	- 16	1"	34.6	1.36	37.0	1.46	350	5070	1400	20300	150	5.91	1795	1.21	IP+M01500-16	SP+M05400-16
H0119031*	31	- 20	1.1/4"	42.1	1.66	44.9	1.77	350	5070	1400	20300	230	9.06	2369	1.59	IP+M01500-20	SP+M05400-20
H0119038*	38	- 24	1.1/2"	51.2	2.02	56.1	2.21	350	5070	1400	20300	300	11.81	4214	2.83	IP+M01600-24	SP+M05500-24

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids (DN 6÷12).
Four high tensile steel spirals (DN 16÷31).
Six high tensile steel spirals (DN 38).

COVER

Composite bi-layer structure with outstanding abrasion resistance

APPLICABLE SPECS

ISO 18752 Grade B

TYPE APPROVALS

MSHA, FRAS (requested)

REMARKS:



• Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

All dimensions in mm

SHIELDMASTER/42



OUTSTANDING WEAR RESISTANCE

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structures
- Very low bend radius makes the product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- Heavy duty power lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H0120006*	6	- 4	1/4"	11.3	0.44	13.3	0.52	420	6090	1680	24360	45	1.77	294	0.20	MF+M00120-04	OPF-04
H0120012*	12	- 8	1/2"	20.3	0.80	22.7	0.89	420	6090	1680	24360	120	4.72	808	0.54	MF+M00910-08	OPK-08
H0120031*	31	- 20	1.1/4"	44.7	1.76	49.5	1.95	420	6090	1680	24360	260	10.24	3701	2.49	IP+M01600-20	SP+M05500-20

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

100 °C, 212 °F

MAX OPERATING TEMPERATURE

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids (DN 6).
Four high tensile steel spirals (DN 10÷25).
Six high tensile steel spirals (DN 31÷51).

COVER

Composite bi-layer structure with outstanding abrasion resistance

APPLICABLE SPECS

ISO 18752 Grade B

TYPE APPROVALS

MSHA, FRAS (requested)

REMARKS:



- Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

All unlabelled dimensions in mm

XTRAFLOW/2WB

HIGH FLOW RATES, LOW PRESSURE DROPS



KEY FEATURES

- Low pressure drops even with high flow rates
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance and electrical antistatic properties of the cover
- High working pressure associated to high flow rates
- Vacuum resistance with SAE 100 R4 performance

APPLICATIONS & FLUIDS

- Medium-Low pressure hydraulic lines with high flow rates, specific installations with severe abrasion conditions, marine applications, underground and open pit mining, return and suction lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01129063	63	- 40	2.1/2"	75.8	2.98	78.5	3.09	105	1520	420	6090	510	20.08	3531	2.37	SP+M05400-40	
H01129076	76	- 48	3"	89.0	3.50	93.6	3.69	80	1160	320	4640	510	20.08	4976	3.34	SP+M05400-48	
H01129089	89	- 56	3.1/2"	102.2	4.02	107.4	4.23	35	500	140	2030	710	27.95	5530	3.72	SP+M05400-56	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids

COVER

Synthetic rubber with high ozone, weather and abrasion resistance

APPLICABLE SPECS

Extension EN 857-2SC, ISO 11237-2SC

TYPE APPROVALS

CU-TR; MSHA

All dimensions in mm

XTRAFLOW/4WS



HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE

KEY FEATURES

- Low pressure drops even with high flow rates
- Extreme abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic cover
- Superior pressure rating
- Structure robustness for tough handling

APPLICATIONS & FLUIDS

- General hydraulics with high flow rates, mine hydraulic return lines, longwalls water lines
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H10091063	63	- 40	2.1/2"	77.5	3.05	81.5	3.21	140	2030	700	10150	700	27.56	5890	3.96	SP+M05400-40	
H10091076	76	- 48	3"	87.8	3.46	92.2	3.63	105	1520	525	7610	700	27.56	5367	3.61	SP+M05400-48	
H10091089	89	- 56	3.1/2"	103.7	4.08	108.7	4.28	80	1160	400	5800	800	31.50	8187	5.50	SP+M05400-56	
H10091102	102	- 64	4"	120.0	4.72	126.0	4.96	35	500	140	2030	900	35.43	10210	6.86	SP+M05400-64	

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel wire spirals

COVER

Synthetic rubber with high abrasion, ozone and weather resistance

APPLICABLE SPECS

Manuli Design

TYPE APPROVALS

CU-TR; MSHA; FRAS (DN76)

All unlabelled dimensions in mm

XTRAFLOW/HT

HIGH TEMPERATURE SUCTION & RETURN LINES



KEY FEATURES

- Vacuum resistance exceeding SAE 100R4 performance
- Extreme high temperature and heat aging resistance
- High flow rates
- Reduced bend radii compared to SAE 100R4

APPLICATIONS & FLUIDS

- Suction and return lines in hydraulic systems with high temperature fluids, low pressure hydraulic systems in mining equipment.
- Remark: compressed air applications require cover pin-pricking and additional safety devices.
- Mineral oils, glycols and polyglycols, transmission fluids, mineral oils in aqueous emulsion (up to 212°F 100°C), air with oil vapours.

TECHNICAL DATA

PART REF.	HOSE SIZE			R.O.D		O.D		MAX. W.P		BURST		MIN. BEND		WEIGHT		FITTINGS	
	DN	dash	inch	mm	inch	mm	inch	bar	psi	bar	psi	mm	inch	g/m	lb/ft	Std 1	Std 2
H01128063	63	- 40	2.1/2"	75.8	2.98	78.5	3.09	35	500	140	2030	254	10.00	3589	2.41	MF+M03400-40	
H01128076	76	- 48	3"	87.8	3.46	90.5	3.56	35	500	140	2030	355	13.98	3291	2.21	MF+M03400-48	
H01128089	89	- 56	3.1/2"	102.2	4.02	106.0	4.17	35	500	140	2030	475	18.70	5708	3.84	MF+M03400-56	

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F

135 °C, 275 °F

MAX OPERATING TEMPERATURE

150 °C, 300 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two wire braids of high tensile steel wire

COVER

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Manuli design

TYPE APPROVALS

CU-TR; MSHA

All dimensions in mm

HOSE INSERTS

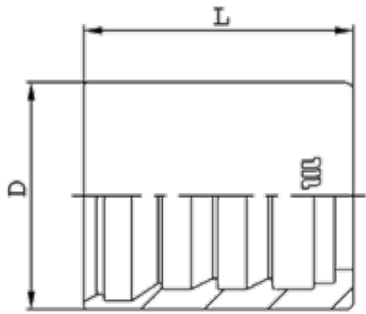
Manuli Hydraulics offer a range of staple hose inserts for wire braid or multi-spiral hose. The range extends from DN6 (1/4") up to DN76 (3") and can be manufactured in carbon steel or stainless steel. The latest release is the new Flushfit male and female staple hose insert which offers a smaller envelope and a more cost effective connection.



HOSE INSERTS

HOSE INSERTS

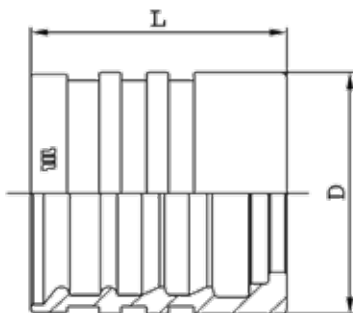
F-II



MULTIFIT FERRULE - M00120

SKIVE FERRULE FOR WIRE BRAID HOSES

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M00120-03	3	3/16	5	17	23.9
M00120-04	4	1/4	6	19.5	28
M00120-05	5	5/16	8	20	28.6
M00120-06	6	3/8	10	23	30
M00120-08	8	1/2	12	26.7	32
M00120-10	10	5/8	16	32	38
M00120-12	12	3/4	19	35.8	41.7

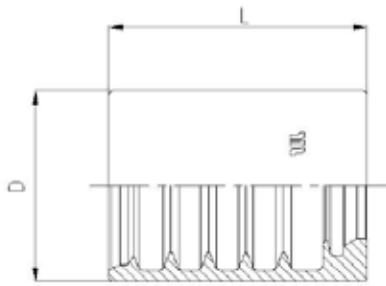


MULTIFIT FERRULE - M00910/M00910/M00930

SKIVE FERRULE FOR WIRE BRAID
AND SPIRAL HOSES

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M00910-03	3	3/16	5	20.6	26
M00910-04	4	1/4	6	22	30
M00910-05	5	5/16	8	24	31
M00910-06	6	3/8	10	26	33
M00910-08	8	1/2	12	30	34
M00910-10	10	5/8	16	33	39
M00920-12	12	3/4	19	38	40
M00930-16	16	1	25	46	54
M00920-20	20	1.1/4	31	57	60
M00910-24	24	1.1/2	38	65	70
M00910-32	32	2	51	79	72

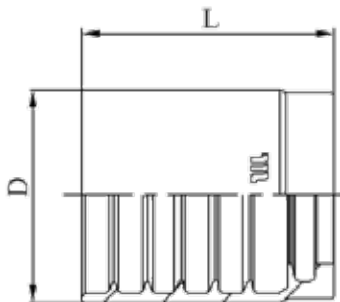
All dimensions in mm



MULTIFIT FERRULE - M03300

NO-SKIVE FERRULE FOR WIRE BRAID HOSES

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M03300-03	3	3/16	5	19.2	22
M03300-04	4	1/4	6	20.5	27.5
M03300-05	5	5/16	8	22.8	28.5
M03300-06	6	3/8	10	25	30

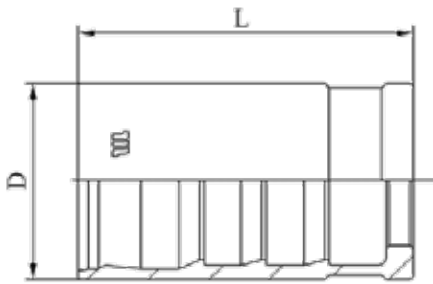


MULTIFIT FERRULE - M03400

NO-SKIVE FERRULE FOR WIRE BRAID HOSES

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M03400-03	3	3/16	5	21	23
M03400-04	4	1/4	6	23	30.1
M03400-05	5	5/16	8	24	30
M03400-06	6	3/8	10	26	31.1
M03400-08	8	1/2	12	29	34
M03400-10	10	5/8	16	33	37
M03400-12	12	3/4	19	37	42
M03400-16	16	1	25	46	50.7
M03400-20	20	1.1/4	31	59	57.2
M03400-24	24	1.1/2	38	67	64.8
M03400-32	32	2	51	80	68.3
M03400-38	38	2.3/8	60	82.5	69
M03400-40	40	2.1/2	63	88.2	68.8
M03400-48	48	3	76	103	75
M03400-56	56	3.1/2	89	123.4	91

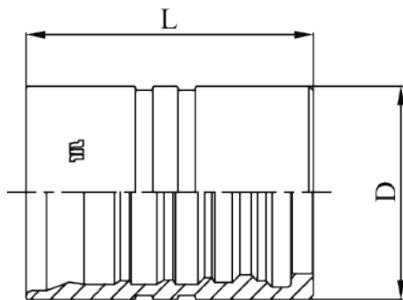
All dimensions in mm



MULTIFIT FERRULE - M00820

NO-SKIVE FERRULE FOR COMPACT HOSES

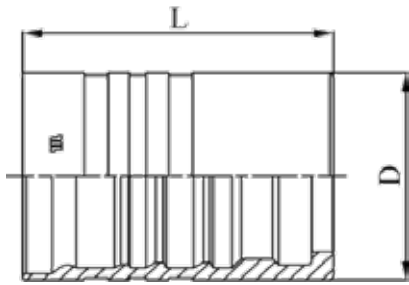
PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M00820-03	3	3/16	5	14	26.4
M00820-06	6	3/8	10	22	32.9
M00820-08	8	1/2	12	26	33.9
M00820-10	10	5/8	16	29	35.9
M00820-12	12	3/4	19	33	41.7
M00820-16	16	1	25	41	49.7
M00820-20	20	1.1/4	31	48	57
M00820-24	24	1.1/2	38	55.5	55
M00820-32	32	2	51	68.6	70



INTERLOCK PLUS FERRULE - M01500

DOUBLE SKIVE FERRULE FOR HEAVY DUTY
SPIRAL HOSES (4 PLY)

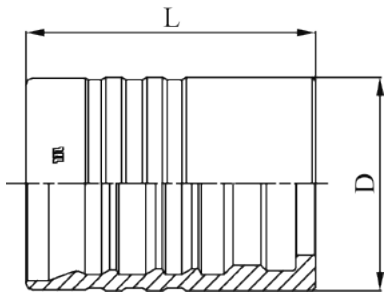
PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M01500-10	10	5/8	16	35	40.9
M01500-12	12	3/4	19	40	51.4
M01500-16	16	1	25	48	64.5
M01500-20	20	1.1/4	31	57	84
M01500-24	24	1.1/2	38	64.3	94
M01500-32	32	2	51	83.5	107
M01500-40	40	2.1/2	63	100	135
M01500-48	48	3	76	107	125



INTERLOCK PLUS FERRULE - M01600

DOUBLE SKIVE FERRULE FOR HEAVY DUTY
SPIRAL HOSES (6 PLY)

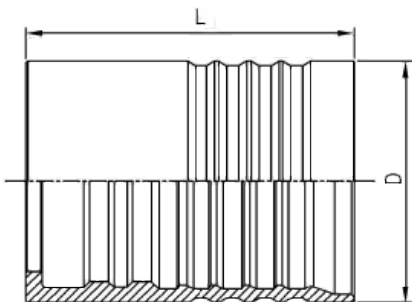
PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M01600-20	20	1.1/4	31	60	85
M01600-24	24	1.1/2	38	69	96



INTERLOCK PLUS FERRULE - M01800/M01810

DOUBLE SKIVE FERRULE FOR EXTRA DUTY
SPIRAL HOSES (6 PLY)

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M01800-20	20	1.1/4	31	65	88.2
M01800-32	32	2	51	86.5	108
M01810-40	40	2.1/2	63	103	135
M01810-48	48	3	76	113.5	125

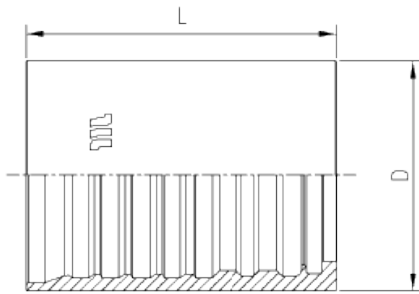


INTERLOCK SUPER FERRULE - M02700

DOUBLE SKIVE FERRULE EXD. 8 WS

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M02700-48	48	3	76	122	165

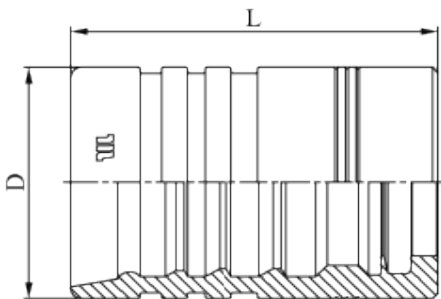
All dimensions in mm



INTERLOCK SUPER FERRULE - M02800

DOUBLE SKIVE FERRULE FOR HEAVY DUTY
SPIRAL HOSES (8 PLY)

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M02800-48	48	3	76	122	165
M02800-56	56	3.1/2	89	149	236.7

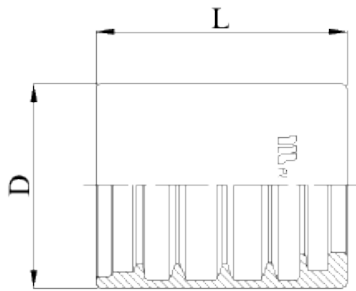


XTRALOCK SUPER FERRULE - M01750

DOUBLE SKIVE FERRULE FOR EXTRA DUTY
SPIRAL HOSES (4 PLY)

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M01750-12	12	3/4	19	45.1	69

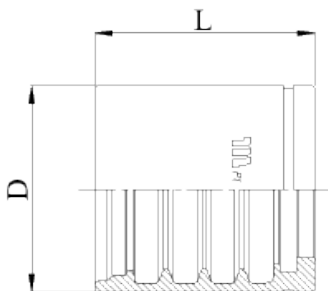
HOSE INSERTS
F-5



SPIRALFIT FERRULE - M05400

NO-SKIVE FERRULE FOR HEAVY DUTY SPIRAL
HOSES (4 PLY)

PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M05400-10	10	5/8	16	40	44.3
M05400-12	12	3/4	19	43.8	53.3
M05400-16	16	1	25	52	64.3
M05400-20	20	1.1/4	31	59.3	72
M05400-24	24	1.1/2	38	68.5	78
M05400-32	32	2	51	84.6	97.1
M05400-40	40	2.1/2	63	97	116
M05400-48	48	3	76	109.8	124
M05400-56	56	3.1/2	89	127.7	123.5
M05400-64	64	4	102	145	126.5



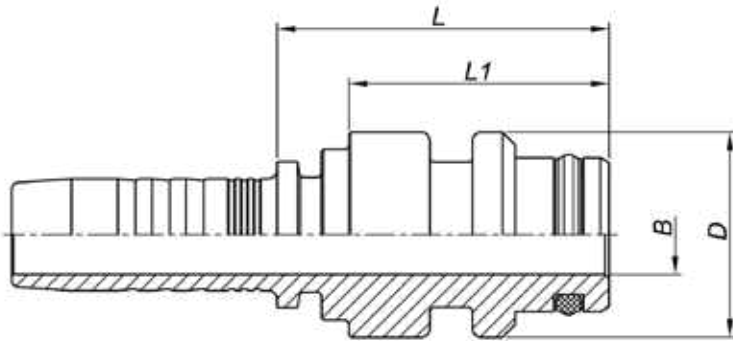
SPIRALFIT FERRULE - M05500

NO-SKIVE FERRULE FOR HEAVY DUTY SPIRAL
HOSES (4-6 PLY)

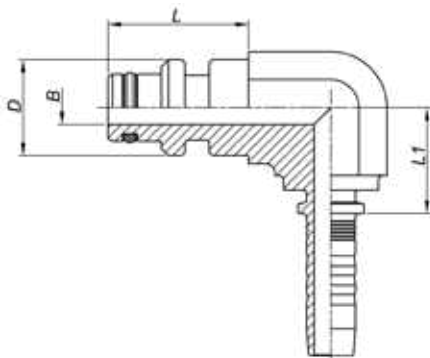
PART REF	HOSE BORE			DIMENSIONS	
	DASH	INCH	DN	D	L
M05500-20	20	1.1/4	31	66	70
M05500-24	24	1.1/2	38	75	79
M05500-32	32	2	51	90	98.1

All dimensions in mm

STANDARD STAPLE MALE - MULTIFIT SERIES M14810

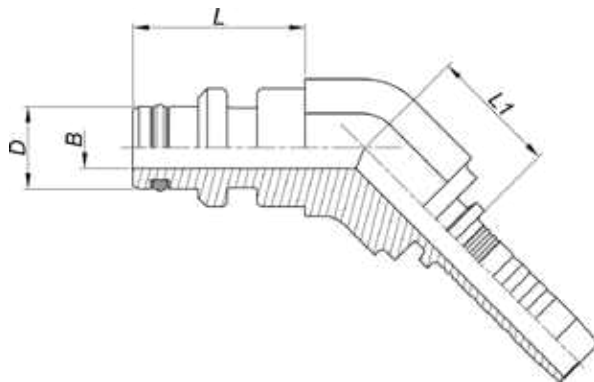


PART REF	HOSE BORE			DIMENSIONS			
	DASH	INCH	DN	B	D	L	L1
M14810-04-04	4	1/4	6	4	15	35.5	31
M14810-06-06	6	3/8	10	7	20	36.5	30
M14810-08-08	8	1/2	12	9.3	24	38.9	30.5
M14810-12-12	12	3/4	19	15	29	39.5	30.5
M14810-16-16	16	1	25	19.8	39	39.5	36
M14810-20-20	20	1.1/4	31	26	46	45.5	35
M14810-24-24	24	1.1/2	38	32	55	51.5	40
M14810-32-32	32	2	51	42	64	52.9	40
M14810-40-40	40	2.1/2	63	55.4	81	98.6	74
M14810-48-48	48	3	76	68.9	86	122.5	91



PART REF	HOSE BORE			DIMENSIONS			
	DASH	INCH	DN	B	D	L	L1
M14890-06-06	6	3/8	10	7	20	29.0	21.8
M14890-08-08	8	1/2	12	9.3	24	29.0	25.9

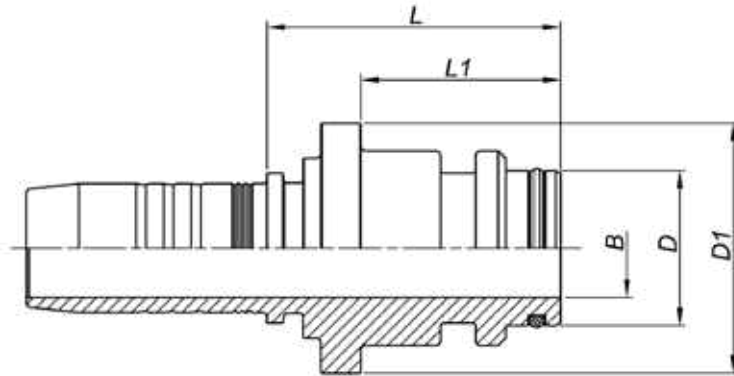
All dimensions in mm



PART REF	HOSE BORE			DIMENSIONS			
	DASH	INCH	DN	B	D	L	L1
M14840-06-06	6	1	10	7	14	29.0	22.0
M14840-08-08	8	1/2	12	9.3	18	29.0	26.0

BEATER FLANGE - MULTIFIT

SERIES M14810

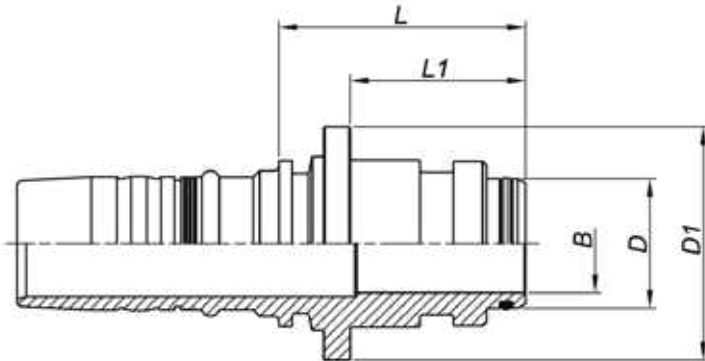


PART REF	NOMINAL BORE			DIMENSIONS				
	DASH	INCH	DN	L	L1	D	B	D1
M14810-04-04BF	4	1/4	6	45.5	32	10	4	22
M14810-06-06BF	6	3/8	10	45.5	32	14	7	30
M14810-08-08BF	8	1/2	12	47	32	18	9.3	32
M14810-12-12BF	12	3/4	19	47	32	24	15	40
M14810-16-16BF	16	1	25	59	40	31	19.8	50
M14810-20-20BF	20	1.1/4	31	61	40	38	26	60
M14810-24-24BF	24	1.1/2	38	70.5	45	47	32	70
M14810-32-32BF	32	2	51	69	45	56	42	82.5
M14810-40-40BF	40	2.1/2	63	100	7	6	81	55.3
M14810-48-48BF	48	3	76	127.5	100	86	68.8	112

All dimensions in mm

BEATER FLANGE - INTERLOCK PLUS

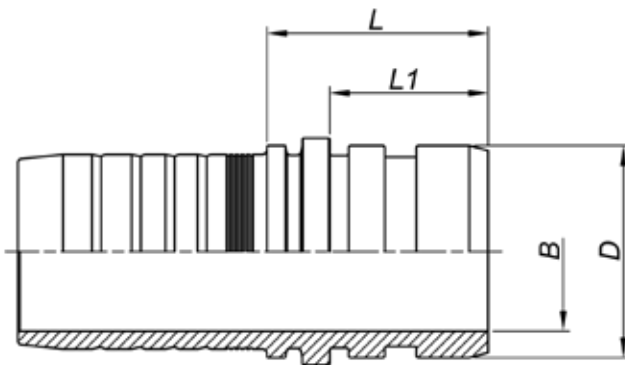
SERIES M34710



PART REF	NOMINAL BORE			DIMENSIONS				
	DASH	INCH	DN	L	L1	D	B	D1
M34710-12-12BF	12	1.1/4	19	61	41	22	14.5	45
M34710-16-16BF	16	1	25	86	58	31	19.5	60
M34710-20-20BF	20	1.1/4	31	89.5	63.5	38	25	70
M34710-24-24BF	24	1.1/2	38	92	65	44	31	80
M34710-32-32BF	32	2	51	95	67.5	50	38	90

STANDARD FLUSHFIT STAPLE MALE - MULTIFIT

SERIES M15910

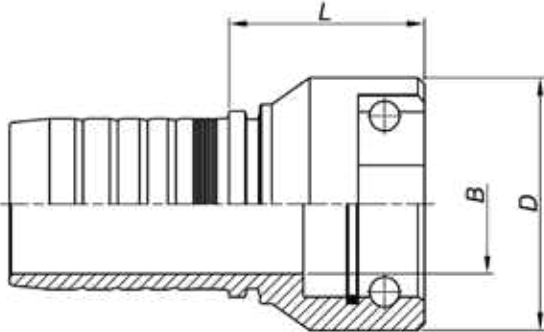


PART REF	HOSE BORE			DIMENSIONS			
	DASH	INCH	DN	L	L1	B	D
* M15910-16-16	12	1	25	55	43	19.8	31
* M15910-24-24	24	1.1/2	38	65	52	32	42
M15910-32-32	32	2	51	58.5	42	42	56
M15910-40-40	40	2.1/2	63	84	58	55.4	76
M15910-48-40	48	3	76	82	58	60	76

* Seal Fitted to Staple Male End

All dimensions in mm

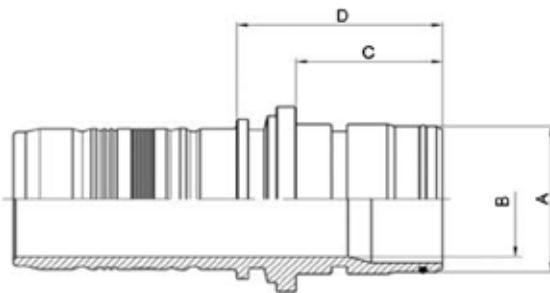
STANDARD FLUSHFIT STAPLE FEMALE - MULTIFIT SERIES M25910



PART REF	HOSE BORE			DIMENSIONS		
	DASH	INCH	DN	B	D	L
* M25910-24-24	24	1.1/2	38	32	70	67
M25910-32-32	32	2	51	42	76	59
M25910-40-40	40	2.1/2	63	55.4	106	76
M25910-48-40	48	3	76	69	106	78

* Seal Fitted to Staple Male End

FLUSHFIT PLUS MALE - SPIRALFIT SERIES M75910

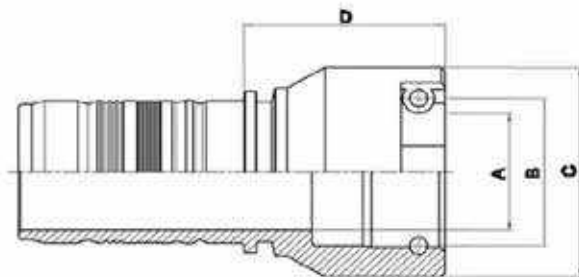


PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
M75910-48-48L	48	3	76	79.0	62.5	74.0	104.0	Xtraflow / 2WB Xtraflow / 4WS
M75910-56-56L	56	3.1/2	89	86.0	76.0	85.0	117.0	Xtraflow / 2WB Xtraflow / 4WS

All dimensions in mm

FLUSHFIT PLUS FEMALE - SPIRALFIT

SERIES M85910



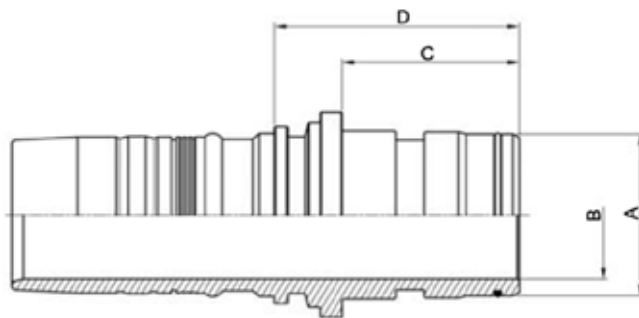
PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
M85910-48-48L	48	3	76	62.5	79.0	112.0	101.0	Xtraflow / 2WB Xtraflow / 4WS
M85910-56-56L	56	3.1/2	89	76.0	86.0	132.0	112.0	Xtraflow / 2WB Xtraflow / 4WS

HOSE INSERTS

F-12

FLUSHFIT PLUS EXTRA MALE - INTERLOCK PLUS

SERIES M35910

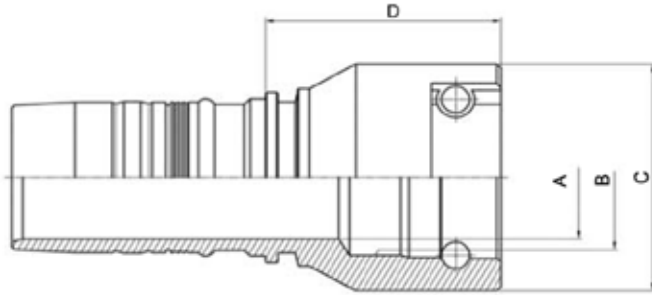


PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
M35910-48-48X	48	3	76	79.0	62.5	81.0	112.0	Diamondspir/14

All dimensions in mm

FLUSHFIT PLUS EXTRA FEMALE - INTERLOCK PLUS

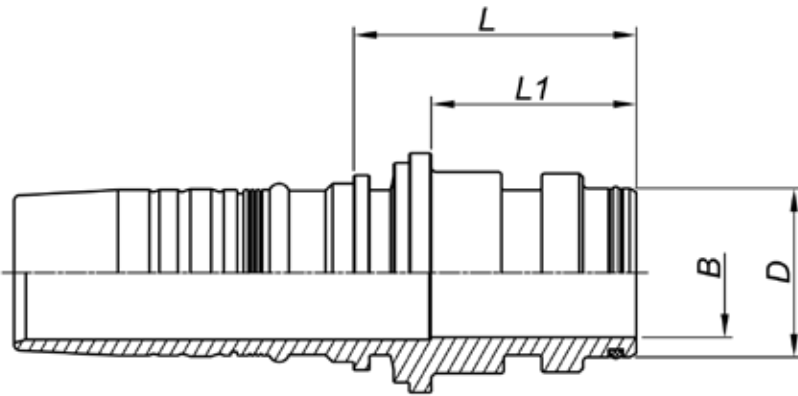
SERIES 45910



PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
M45910-48-48X	48	3	76	62.5	79	115	112	Diamondspir/14

HIGH PRESSURE FLUSHFIT MALE - INTERLOCK PLUS

M36110

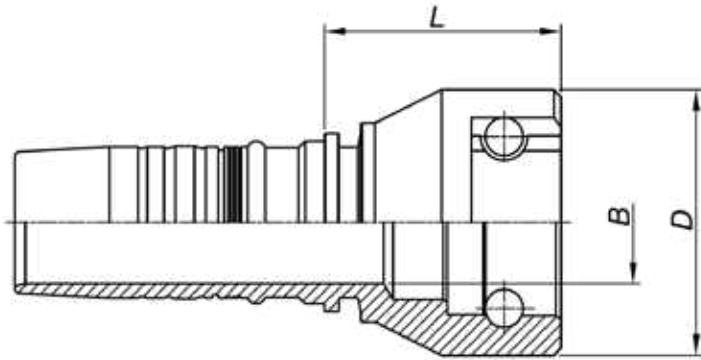


PART REF	NOMINAL BORE			DIMENSIONS			
	DASH	INCH	DN	L	L1	D	B
M36110-24-24	24	1.1/2	38	89	65	44	31
M36110-32-32	32	2	51	92	67	50	38
M36110-40-40	40	2.1/2	63	108	78	65	50
M36110-48-48	48	3	76	121	90	77	58.5

All dimensions in mm

HIGH PRESSURE FLUSHFIT FEMALE - INTERLOCK PLUS

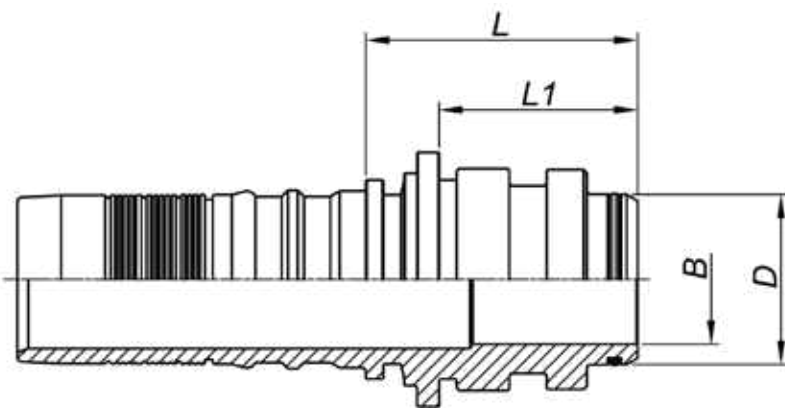
M46110



PART REF	NOMINAL BORE			DIMENSIONS		
	DASH	INCH	DN	L	B	D
M46110-24-24	24	1.1/2	38	87	31	90
M46110-32-32	32	2	51	84.5	41	100
M46110-40-40	40	2.1/2	63	100	51.5	112
M46110-48-48	48	3	76	117	62.5	146

HIGH PRESSURE FLUSHFIT MALE - INTERLOCK SUPER

MA6110

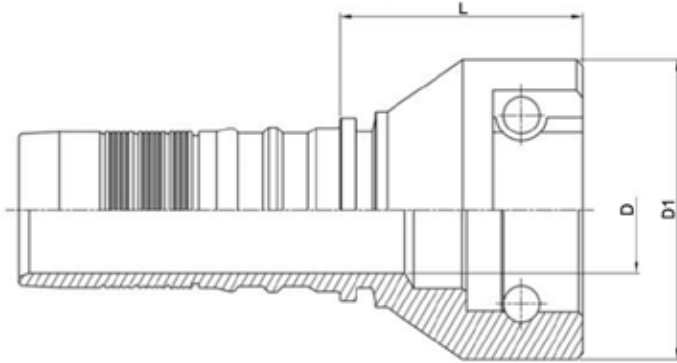


PART REF	NOMINAL BORE			DIMENSIONS			
	DASH	INCH	DN	L	L1	D	B
MA6110-48-48	48	3	76	123	90	77	58.5

All dimensions in mm

HIGH PRESSURE FLUSHFIT FEMALE - INTERLOCK SUPER

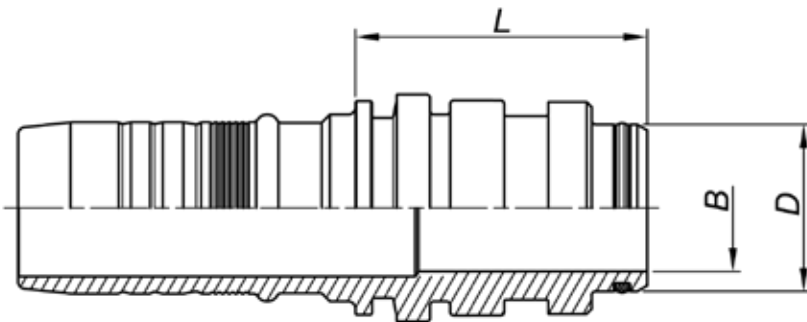
MB6110



PART REF	NOMINAL BORE			DIMENSIONS		
	DASH	INCH	DN	L	D	D1
MB6110-48-48	48	3	76	119	62.5	146

HIGH PERFORMANCE FLUSHFIT STAPLE MALE - XTRALOCK

SERIES M56110



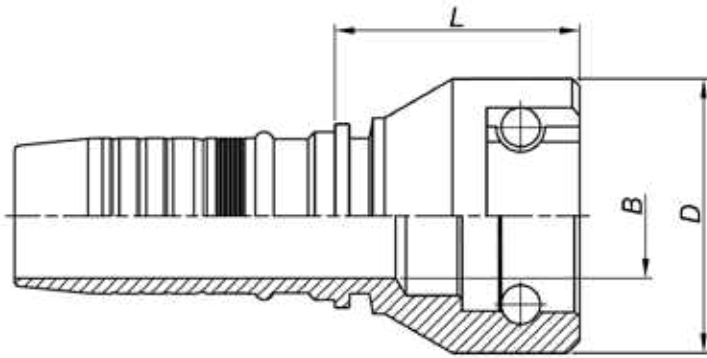
PART REF	HOSE BORE			DIMENSIONS		
	DASH	INCH	DN	L	B	D
M56110-32-32	32	2	50	87	38.0	50
M56110-40-40	40	2.1/2	63	110	49.8	65

*Identical to M54610-32-32

All dimensions in mm

HIGH PERFORMANCE FLUSHFIT STAPLE FEMALE - XTRALOCK

SERIES M66110



PART REF	HOSE BORE			DIMENSIONS		
	DASH	INCH	DN	A	B	C
M66110-32-32	32	2	50	84.5	41	100
M66110-40-40	40	2.1/2	63	100	51	112

SLIDERLOCK



Sliderlock cover in "Locked" position

Key Benefits

- Enhanced safety and performance
- Ensures full staple retention
- Inspection holes allow visual staple check
- Innovative design actively prevents cover disengagement during service
- Cover minimises dust ingress
- Compact, snag-free design
- The safety cover always remains on the hose
- Knurled finish for easy twist-and-click connection
- Red colour identifies high pressure lines

Manuli Hydraulics' Sliderlock is a new concept to ensure staple lock hose connection integrity.

The spring loaded cover ensures that the staple is fully retained, even under the harshest of conditions. This unique feature enhances the staple lock design which has been in use in underground mining applications for over 50 years.



All dimensions in mm

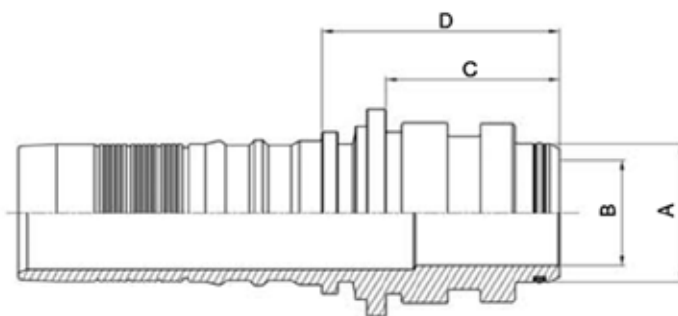
SLIDERLOCK

PART REF	NOMINAL BORE			OD	WP (bar)	Impluse cycles
	DASH	INCH	DN			
*SLH-24	24	1	38	92	420	1.000.000
*SLH-32	32	2	51	107	420	1.000.000
*SLH-40	40	2.1/2	63	122	350	1.000.000
*SLH-48	48	3	76	152	350	1.000.000

*fully interchangeable with SH & SHF series staple male ends

- Sliderlock design is also available on ASAF, ASAFP, ASAFPX and ASHF product ranges
- Refer to SHF28 for seals

HIGH PRESSURE SLIDERLOCK MALE SERIES MA6510

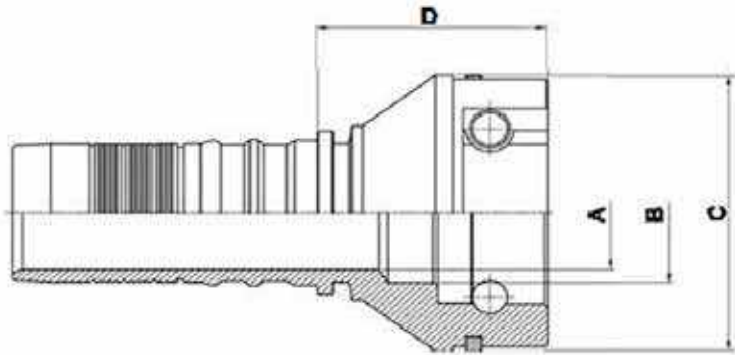


PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
MA6510-48-48	48	3	76	77.0	58.5	90.0	123.0	Diamondspir/35

All dimensions in mm

HIGH PRESSURE SLIDERLOCK FEMALE

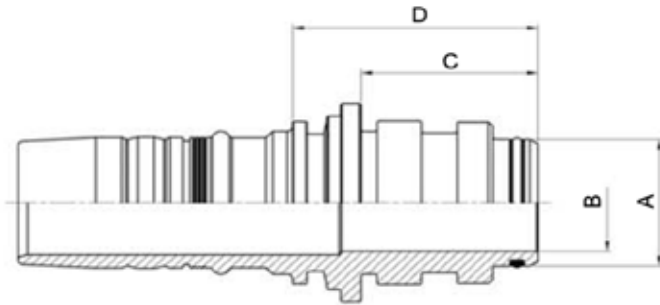
SERIES MB6510



PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
MB6510-48-48	48	3	76	62.5	77.0	152.0	119.0	Diamondspir/35

HIGH PRESSURE SLIDERLOCK MALE - INTERLOCK PLUS

SERIES M36510

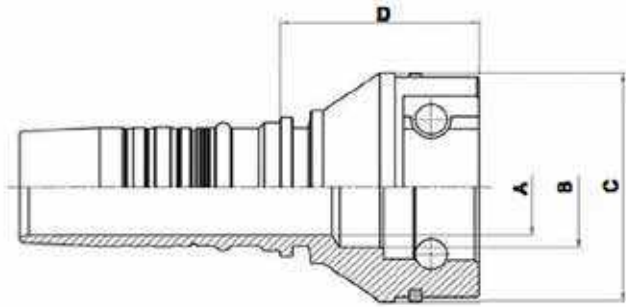


PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
M36510-24-24	24	1.1/2	38	44.0	31.0	65.0	89.0	Rockmaster/4SH Rockmaster/13 Rockmaster/15
M36510-32-32	32	2	51	50.0	38.0	65.0	90.0	Rockmaster/4SH Rockmaster/13
M36510-40-40	40	2.1/2	63	65.0	49.7	78.0	108.0	Xtraflow/4WS Diamondspir/21 Diamondspir/35
M36510-48-48	48	3	76	77.0	58.5	90.0	121.0	Xtraflow/4WS Diamondspir/14 Diamondspir/21

All dimensions in mm

HIGH PRESSURE SLIDERLOCK FEMALE - INTERLOCK PLUS

SERIES M46510

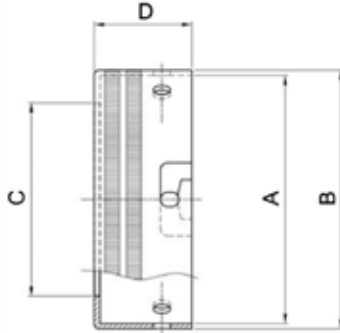


PART REF	NOMINAL BORE			A	B	C	D	HOSE SELECTION
	DASH	INCH	DN					
M46510-24-24	24	1.1/2	38	31.0	44.0	92.0	87.0	Rockmaster/4SH Rockmaster/13 Rockmaster/15
M46510-32-32	32	2	51	41.0	50.0	107.0	84.0	Rockmaster/4SH Rockmaster/13
M46510-40-40	40	2.1/2	63	51.0	65.0	122.0	100.0	Xtraflow/4WS Diamondspir/21 Diamondspir/35
M46510-48-48	48	3	76	62.5	77.0	152.0	118.0	Xtraflow/4WS Diamondspir/14 Diamondspir/21

All dimensions in mm

COVER - SLIDERLOCK - OEM SPARE COMPONENTS

SLHC



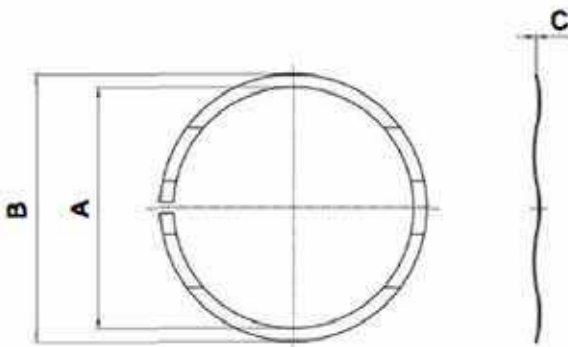
PART REF	NOMINAL BORE			A	B	C	D
	DASH	INCH	DN				
SLHC-24	24	1.1/2	38	88.0	92.0	62.0	39.5
SLHC-32	32	2	51	102.8	107.0	80.0	40.4
SLHC-40	40	2.1/2	63	118.0	122.0	91.0	47.5
SLHC-48	48	3	76	147.7	152.0	116.0	53.7

HOSE INSERTS

F-22

WAVE SPRING - SLIDERLOCK - OEM SPARE COMPONENTS

SLHWS

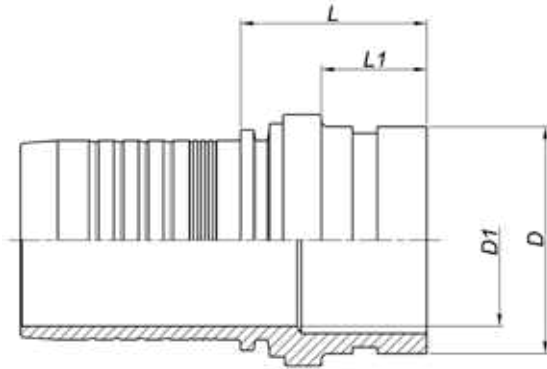


PART REF	NOMINAL BORE			A	B	C
	DASH	INCH	DN			
SLHWS-24	24	1.1/2	38	76.4	90.0	0.8
SLHWS-32	32	2	51	91.4	105.0	0.8
SLHWS-40	40	2.1/2	63	106.4	120.0	0.8
SLHWS-48	48	3	76	136.4	150.0	0.8

All dimensions in mm

VICTAULIC - MULTIFIT INSERT

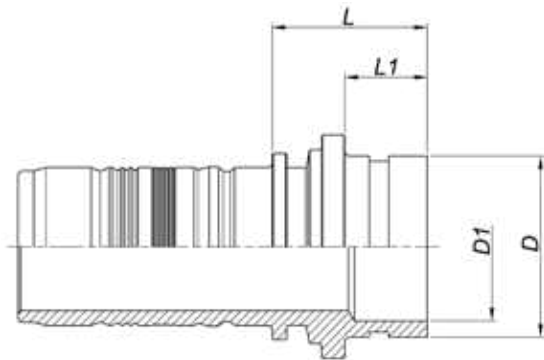
SERIES M16910



PART REF	NOMINAL BORE			L	L1	D	D1
	DASH	INCH	DN				
M16910-32-23	32	2	51	52	34	60.3	42
M16910-40-40	40	2.1/2	63	60	34	73	55.3
M16910-48-48	48	3	76	42.5	30.5	89	69

VICTAULIC - SPIRALFIT INSERT

SERIES M76910

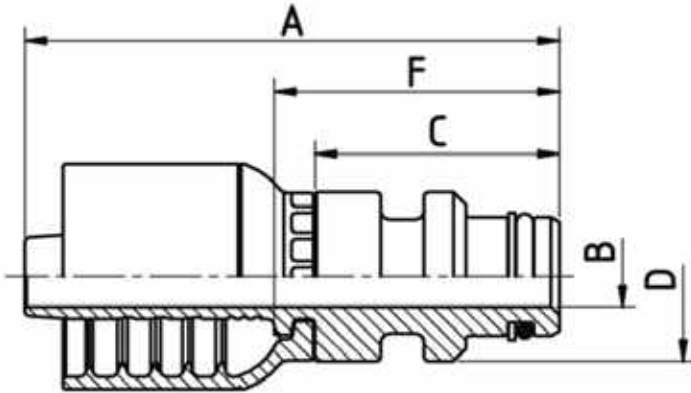


PART REF	NOMINAL BORE			L	L1	D	D1
	DASH	INCH	DN				
M76910-32-32	32	2	51	55.5	34	60.3	41
M76910-40-40	40	2.1/2	63	64	34	73	51.5
M76910-48-48	48	3	76	65	35	89	62.5

All dimensions in mm

STAPLE-LOCK MALE SAE J1467 - OPF

OPF14810



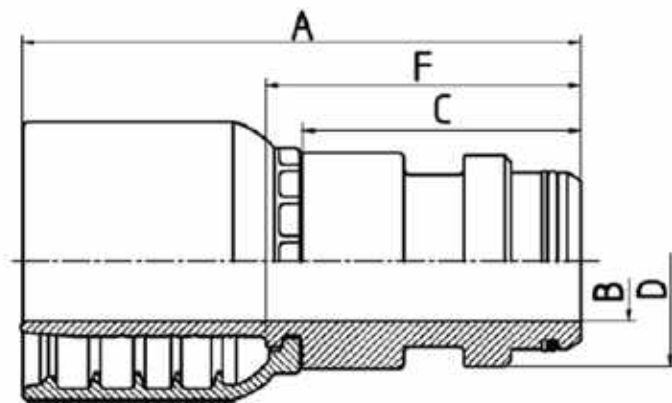
PART REF	NOMINAL BORE			B	A	C	D	F
	DASH	INCH	DN					
OPF14810-04A04	4	1/4	6	40	60.5	28.7	15	33
OPF14810-06A06	6	3/8	10	7	63	28.8	20	33.5
OPF14810-08A08	8	1/2	12	9.3	65	28.7	24	34
OPF14810-12A12	12	3/4	19	15	71.5	28.9	29	35
OPF14810-16A16	16	1	25	19.8	92	36.6	39	44

HOSE INSERTS

F-24

SUPER STAPLE-LOCK MALE - OPK

OPK14610

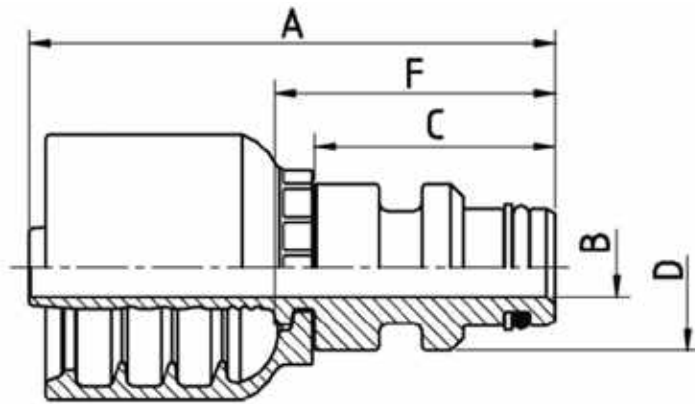


PART REF	NOMINAL BORE			B	A	C	D	F
	DASH	INCH	DN					
OPK14610-12A12	12	3/4	19	15	80.5	38	28.6	44
OPK14610-16A16	16	1	25	22	112	56.5	38.4	63.5
OPK14610-20A20	20	1.1/4	31	26	120.5	60	45.4	68

All dimensions in mm

STAPLE-LOCK MALE SAE J1467 - OPK

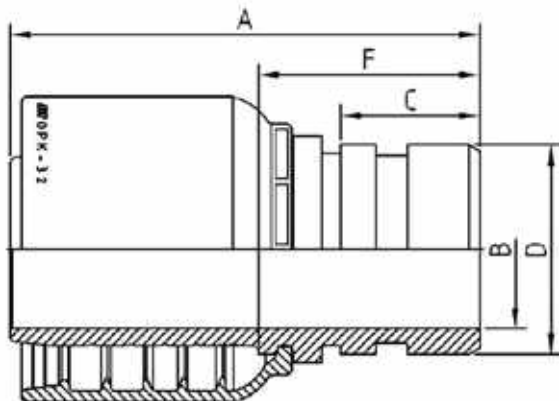
OPK14810



PART REF	NOMINAL BORE			B	A	C	D	F
	DASH	INCH	DN					
OPK14810-06A06	6	3/8	10	7	63	28.8	20	33.5
OPK14810-08A08	8	1/2	12	9.3	65	28.7	24	34
OPK14810-12A12	12	3/4	19	15	71.5	28.9	29	35
OPK14810-16A16	16	1	25	19.8	92	34.6	46	42.5
OPK14810-20A20	20	1.1/4	31	26	95	34.6	46	42.5
OPK14810-24A24	24	1.1/2	38	32	113.5	43.5	55	51.5
OPK14810-32A32	32	2	51	42	115.5	40	64	49.5

LOW PRESSURE FLUSHFIT MALE - OPK

OPK15910

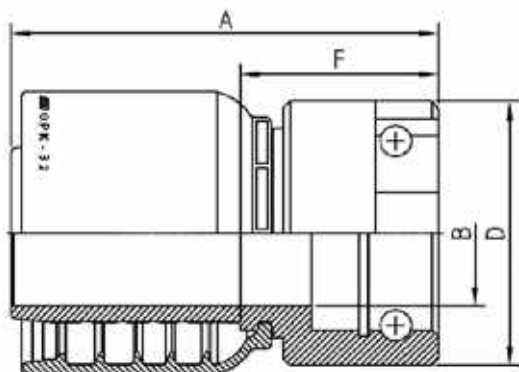


PART REF	NOMINAL BORE			B	A	C	D	F
	DASH	INCH	DN					
OPK15910-24A24	24	1.1/2	38	32	127	47	46	65
OPK15910-32A32	32	2	51	42	125	37	56	59

All dimensions in mm

LOW PRESSURE FLUSHFIT FEMALE - OPK

OPK25910



PART REF	NOMINAL BORE			B	A	D	F
	DASH	INCH	DN				
OPK25910-24A24	24	1.1/2	38	32	129	70	67
OPK25910-32A32	32	2	51	42	123	76	57

BOURDON TUBE PRESSURE GAUGE

MODEL SAG-06, MINING VERSION

Standard Version

PROCESS CONNECTION	Forged brass, Lower mount (LM), Plug connection per, DIN 20043, DN10
PRESSURE ELEMENT	Cu-alloy
MOVEMENT	Cu-alloy, wear parts argentan
DIAL	White, with pointer stop pin, black lettering, colour divided scale
POINTER	Plastic, black
CASE	Forged brass
WINDOW	Plastic
BEZEL RING	Crimp ring, glossy finish stainless steel
FILLING LIQUID	Glycerine



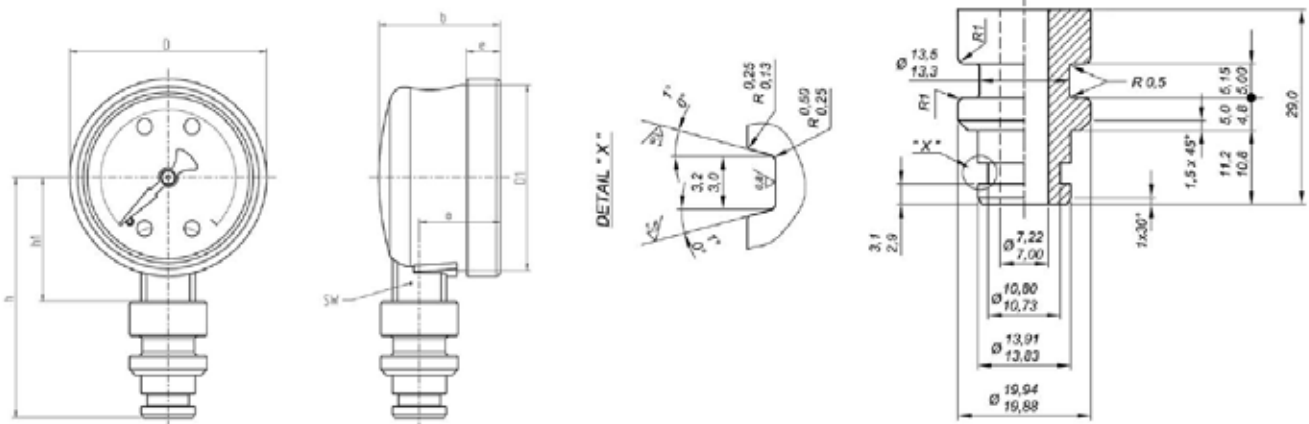
Description

- Nominal Size: 50mm
- Accuracy class: 2.5
- Scale range: 0 - 600 bar
- Pressure limitation
Steady: 3/4 x full scale value
Fluctuating: 2/3 x full scale value
Short time: full scale value

- Operating temperature
Ambient : +10 - +60°C
Medium : +60°C maximum
- Temperature effect:
When the temperature of the measuring
the system deviates from the reference
temperature (+20°C): max ±0.4 %/10 K
of the span

Standard Version **Lower Mount (LM)**

Plug connection per DIN 20043, DN10



NS	a	b	D	D1	h+/-1	e	SW	Weight (kg)
50	19	31	53.3	49.8	28.5	6.5	14.0	0.22

All dimensions in mm

Hose Protection Covers

Manuli Hydraulics stocks a full range of hydraulic hose and electrical cable safety covers. These products offer improved operator personal safety, external hose and cable protection from either heat or abrasion, as well as hydraulic oil spill containment. Manuli Hydraulics offers an extensive range of protection products tailored to meet a wide variety of industrial needs and requirements.



Products

Texsleeve®

A textile protective sleeve in a wide range of sizes that is designed to offer significant abrasion and heat protection to single and bundled hoses or electrical cables. Texsleeve® also provides protection from oil spill when used to cover high pressure hydraulic hose. Other products in this family are Texwrap™, an easy to install textile sleeve, and Textstrip™, a textile belt for bundling or hanging hoses or cables.

Kovertec™

A high performance spiral wrap for hoses and electrical cables that offers superior resistance to surface abrading and heat, whilst providing an effective solution to bundling of single or multiple hoses / cables without compromising flexibility. Three variants are available in this family of products: Kovertec PSA, Kovertec HT and Kovertec HD.

Shiltek™

A silicone coated fire resistant sleeve with outstanding heat resistant properties. Shiltek is supplied in a wide range of sizes and can be used where either high temperature insulation or external protection is required.

All dimensions in mm

Hydraulic Manifolds

Manifolds are used to distribute fluid through a hydraulic circuit, whilst improving system design by offering multiple connections through a single block.

Manuli Hydraulics design and manufacture both low- and high-pressure hydraulic manifolds to customers' unique specifications. Manifolds can be produced in numerous different configurations and compliment the Manuli XXL hose range typically used in applications such as monorail systems.

The constant requirement for increased output and greater productivity drive continuous improvement and innovation in this custom made range of speciality products.



Key Benefits

- Minimises leak paths
- Reduces hose stress on monorail systems
- Reduces the number of connections
- Simplifies hose installation and system design
- Designs accommodate multiple industry standard porting options
- Compact design for both low- and high-pressure applications
- 100% pressure tested and certified



All dimensions in mm

ADDITIONAL MINING PRODUCTS

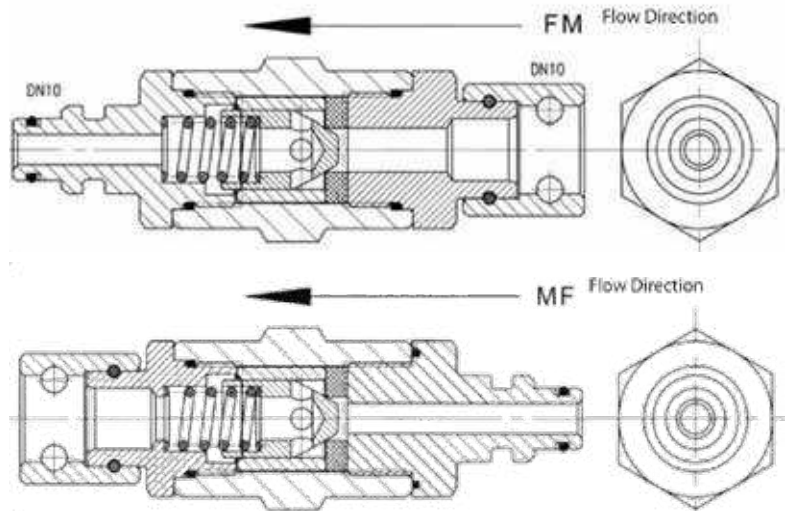
Non-Return Valves

MCV SA SERIES

- DN10 - DN50
- Max Working Pressure 320 - 520 bar
- Opening pressure 0.5 - 1 bar



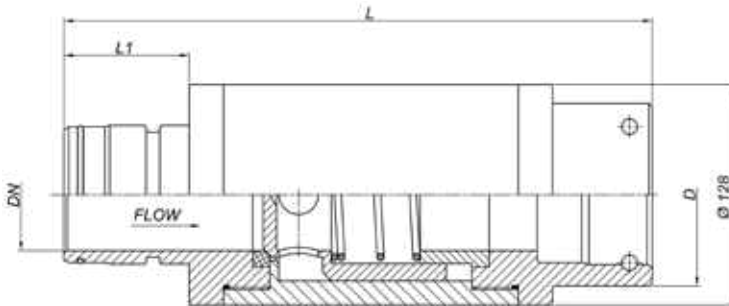
MCV-FM-06-06 / MCV-MF-06-06 (DN10)	
Max Working Pressure	500 bar
Approx Opening Pressure	0.5 bar
Overall Length	127mm FM, MF 126mm FF



DN	PN (bar)	INPUT	OUTPUT	OVERALL LENGTH	PART NUMBER MCV-SA...
10	500	Female staple DN10	Male staple DN10	127	FM-06-06
10	500	Male staple DN10	Female staple DN10	127	MF-06-06
10	500	Female staple DN10	Female staple DN10	126	FF-06-06
12	500	Female staple DN12	Male staple DN12	127	FM-08-08
12	500	Male staple DN12	Female staple DN12	127	MF-08-08
12	500	Female staple DN12	Female staple DN12	126	FF-08-08
19	320	Female staple DN20	Male staple DN20	153	FM-12-12
19	320	Male staple DN20	Female staple DN20	153	MF-12-12
19	320	Female staple DN20	Female staple DN20	155	FF-12-12
25	320	Female staple DN25	Male staple DN25	196	FM-16-16
25	320	Male staple DN25	Female staple DN25	196	MF-16-16
25	320	Female staple DN25	Female staple DN25	194	FF-16-16
31	320	Female staple DN32	Male staple DN32	198	FM-20-20
31	320	Male staple DN32	Female staple DN32	198	MF-20-20
31	320	Female staple DN32	Female staple DN32	197	FF-20-20
38	320	Female staple DN40	Male staple DN40	226	FM-24-24
38	320	Male staple DN40	Female staple DN40	226	MF-24-24
38	320	Female staple DN40	Female staple DN40	226	FF-24-24
51	320	Female staple DN50	Male staple DN50	259	FM-32-32
51	320	Male staple DN50	Female staple DN50	259	MF-32-32
51	320	Female staple DN50	Female staple DN50	259	FF-32-32

All dimensions in mm

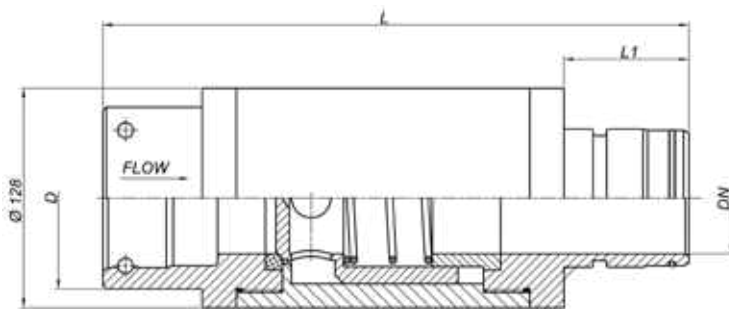
MALE - FEMALE



MATERIALS	
Body Steel	EN-S355J2G3 zinc plated
Piston	Brass
O Rings	NBR
Sealing	POM

PART REF	DN	D	L	L1	WORKING PRESSURE	SAFETY FACTOR	MAXIMUM OPENING PRESSURE
MCV-SAMF-4040	63	106	383	70	70 bar	4:1	1.0 bar
MCV-SAMF-4848	75	120	435	90	46 bar	4:1	1.0 bar

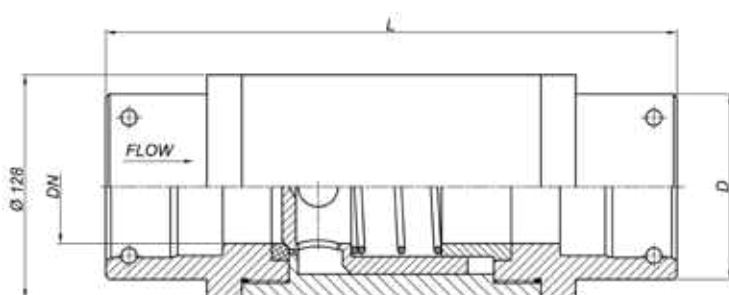
FEMALE - MALE



MATERIALS	
Body Steel	EN-S355J2G3 zinc plated
Piston	Brass
O Rings	NBR
Sealing	POM

PART REF	DN	D	L	L1	WORKING PRESSURE	SAFETY FACTOR	MAXIMUM OPENING PRESSURE
MCV-SAFM-4040	63	106	383	70	70 bar	4:1	1.0 bar
MCV-SAFM-4848	75	120	435	90	46 bar	4:1	1.0 bar

FEMALE - FEMALE



MATERIALS	
Body Steel	EN-S355J2G3 zinc plated
Piston	Brass
O Rings	NBR
Sealing	POM

PART REF	DN	D	L	WORKING PRESSURE	SAFETY FACTOR	MAXIMUM OPENING PRESSURE
MCV-SAF-4040	63	106	350	70 bar	4:1	1.0 bar
MCV-SAF-4848	75	120	404	46 bar	4:1	1.0 bar

All dimensions in mm

Rotary Staple Lock Live Swivel

Manuli Hydraulics offers a range of rotary staple lock live swivel couplings, designed to the highest standards for operation in demanding interchock applications.

The live swivel eliminates the stresses of hose twist and torsional forces, extending hose life and improving mining safety.

With both high- and low-pressure variants, the live swivel components also incorporate Manuli Hydraulics' new one-piece sealing solution, Supa Seal.



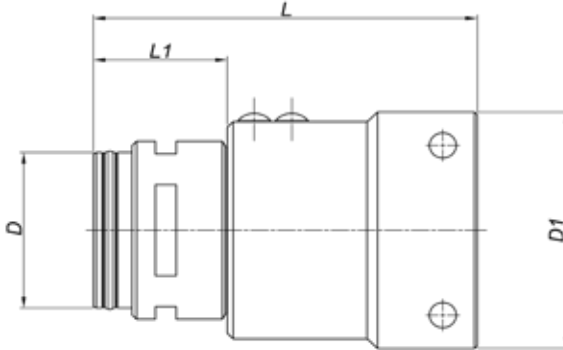
Key Features

- Compact design for both high- and low-pressure applications
- Validated to a 4:1 factor of safety
- 30,000 simulated interchock advances
- Fully impulse tested to 500,000 cycles
- Eliminates hose twist and torsional resistance under full working pressure
- Location flats lock male end for optimum swivel performance
- Fully sealed to avoid ingress of dirt
- Lubrication points for routine maintenance
- Integral breather port prevents over-greasing

All dimensions in mm

ASA ROTARY STAPLE LOCK LIVE SWIVEL

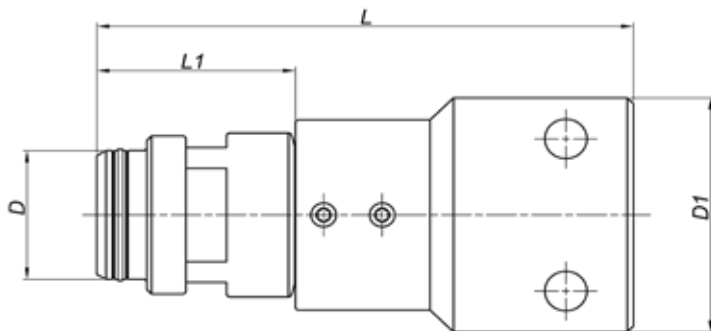
SERIES ASA31SWL



PART REF	NOMINAL BORE			W.P (bar)	W.P (psi)	L	L1	D	D1
	DASH	INCH	DN						
ASA31SWL-16-16	16	1	25	280	4060	111	41	31	55
ASA31SWL-20-20	20	1.1/4	31	210	3045	111	42	38	60
ASA31SWL-32-32	32	2	51	175	2537	128	44	56	85
ASA31SWL-40-40	40	2.1/2	63	70	1015	206	75	79	106

ASH ROTARY STAPLE LOCK LIVE SWIVEL

SERIES ASH31SWL



PART REF	NOMINAL BORE			W.P (bar)	W.P (psi)	L	L1	D	D1
	DASH	INCH	DN						
ASH31SWL-16-16	16	1	25	420	6090	148	60	31	60
ASH31SWL-20-20	20	1.1/4	31	420	6090	165	58	38	70
ASH31SWL-24-24	24	1.1/2	38	420	6090	171	63	44	80
ASH31SWL-32-32	32	2	51	420	6090	182	66	50	95

All dimensions in mm

ADDITIONAL MINING PRODUCTS

Stainless Steel Adaptors

Manuli Hydraulics' extended stainless steel staple adaptor programme builds upon the success of its existing and popular range, by offering SA adaptors in 303/304 Stainless steel.

These adaptors are ideally suited in underground water lines and highly corrosive environments, where extended service life represents a cost effective alternative to plated steel.



	PART REF	NOMINAL BORE			DESCRIPTION
		DASH	INCH	DN	
	ASA01-06-06-SS	6	3/8	10	Straight Female Adaptor
	ASA01-08-08-SS	8	1/2	12	Straight Female Adaptor
	ASA01-12-12-SS	12	3/4	20	Straight Female Adaptor
	ASA02-06-06-SS	6	3/8	10	90° Female Elbow
	ASA02-08-08-SS	8	1/2	12	90° Female Elbow
	ASA03-06-06-04-SS	6/4	3/8 / 1/4	10/06	Female Tee
	ASA03-06-06-06-SS	6	3/8	10	Female Tee
	ASA03-08-08-06-SS	08/06	1/2 / 3/8	12/10	Female Tee
	ASA03-08-08-08-SS	8	1/2	12	Female Tee
	ASA03-12-12-12-SS	12	3/4	19	Female Tee
	ASA03-12-12-06-SS	12 / 6	3/4 - 3/8	19 / 10	Female Tee
	ASA03-12-12-08-SS	12 / 8	3/4 - 1/2	19 / 12	Female Tee
	ASA12-06-06-SS	6	3/8	10	90° Swivel Female Elbow
	ASA12-08-08-SS	8	1/2	12	90° Swivel Female Elbow
	ASA12-12-12-SS	12	3/4	19	90° Swivel Female Elbow
	ASA13-06-06-06-SS	6	3/8	10	"T" Swivel Female
	ASA13-08-08-06-SS	8 / 6	1/2 - 3/8	12 / 10	"T" Swivel Female
	ASA13-12-12-06-SS	12 / 6	3/4 - 3/8	19 / 10	"T" Swivel Female
	ASA13-12-12-08-SS	12 / 8	3/4 - 1/2	19 / 12	"T" Swivel Female
	ASA13-12-12-12-SS	12	3/4	19	"T" Swivel Female

All dimensions in mm

ADDITIONAL MINING PRODUCTS

Stainless Steel Adaptors (Continued)

	PART REF	NOMINAL BORE			DESCRIPTION
		DASH	INCH	DN	
	ASA15-06-06-SS	6	3/8	10	135° Swivel Female
	ASA15-08-08-SS	8	1/2	12	136° Swivel Female
	ASA15-12-12-SS	12	3/4	19	137° Swivel Female
	ASA21-06-06-SS	6	3/8	10	Equal Straight Male
	ASA21-06-06-72-SS	6	3/8	10	Equal Straight Male 72mm
	ASA21-08-08-SS	8	1/2	12	Equal Straight Male
	ASA21-12-12-SS	12	3/4	20	Equal Straight Male
	ASA21-06-06-105-SS	6	3/8	10	Equal Straight Male 105 mm
	ASA21-08-08-85-SS	8	1/2	12	Equal Straight Male 85 mm
	ASA21-12-12-95-SS	8	1/2	12	Equal Straight Male 95 mm
	ASA21-08-06-SS	8 / 6	1/2 - 3/8	12 / 10	Reducing Straight Male
	ASA21-12-08-SS	12 / 8	3/4 - 1/2	19 / 12	Reducing Straight Male
	ASA29-06-SS	6	3/8	10	Staple Male Plug
	ASA29-08-SS	8	1/2	12	Staple Male Plug
	ASA29-12-SS	12	3/4	19	Staple Male Plug
	ASA31F-08-06-SS	8/6	1/2 - 3/8	12/10	Male - Female Adaptor
	ASA32F-06-04-SS	6/4	3/8 - 1/4	10/06	90° Male - Female Elbow
	ASA32F-06-06-SS	6	3/8	10	90° Male - Female Elbow
	ASA32F-12-12-SS	12	3/4	20	90° Male - Female Elbow
	ASA32F-08-08-SS	8	1/2	12	90° Male - Female Adaptor
	ASA32-06-06-SS	6	3/8	10	90° Male - Swivel Female Adaptor
	ASA32-08-08-SS	8	1/2	12	90° Male - Swivel Female Adaptor
	ASA32-12-12-SS	12	3/4	12	90° Male - Swivel Female Adaptor

All dimensions in mm

ADDITIONAL MINING PRODUCTS

Stainless Steel Adaptors (Continued)

	PART REF	NOMINAL BORE			DESCRIPTION
		DASH	INCH	DN	
	ASA33F-06-06-06-SS	6	3/8	10	Male - Female Tee "T" Port
	ASA33-06-06-06-SS	6	3/8	10	Male - "T" Swivel Female
	ASA33-08-08-08-SS	8	1/2	12	Male - "T" Swivel Female
	ASA34F-06-06-04-SS	6/4	3/8 - 1/4	10/6	Male - Female Tee "L" Port
	ASA34F-06-06-06-SS	6	3/8	10	Male - Female Tee "L" Port
	ASA34F-12-12-06-SS	12/6	3/4 - 3/8	20/10	Male - Female Tee "L" Port
	ASA34-06-06-06-SS	6	3/8	10	Male - "L" Swivel Female Adaptor
	ASA34-08-08-08-SS	8	1/2	12	Male - "L" Swivel Female Adaptor
	ASA34-08-08-06-SS	8 / 6	1/2 - 3/8	12 / 10	Male - "L" Swivel Female Adaptor
	ASA35-06-06-SS	6	3/8	10	135° Male - Swivel Female Elbow
	ASA35-08-08-SS	8	1/2	12	135° Male - Swivel Female Elbow
	ASA35-12-12-SS	12	3/4	19	135° Male - Swivel Female Elbow

All dimensions in mm

Supa Black 2000

Supa Black is a new coating for mining fittings that provides outstanding levels of ductility and corrosion resistance.

By significantly extending the service life of fittings and minimising maintenance downtime, Supa Black provides an ideal cost effective solution for harsh environment applications.

Offering up to 2,000 hours to red rust under salt spray test conditions, Supa Black outlasts traditional zinc plated finishes by up to three times.

In addition, the excellent ductility of the coating maintains this exceptional performance, even after crimping or swaging, as it is not prone to the cracking or flaking that can affect other coating types.



Key Benefits

- Up to 2,000 hours to red rust
- Excellent ductility
- Uniform coating
- Good thermal stability
- Unique appearance
- Galvanic corrosion resistance
- Superior abrasion performance
- High volume production process
- Extends service life up to 3 times

Salt Spray Test

(ASTM B117, BS 7479, ISO 9227, NS DIN 5002)



Supa Black < 12µm



Zinc Plating

All dimensions in mm

ADDITIONAL MINING PRODUCTS

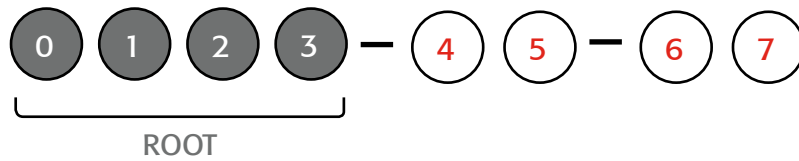
USEFUL CONVERSIONS

STANDARD SIZE EQUIVALENTS			
DN	DASH	MM	INCH
05	3	4.8	3/16
06	4	6.3	1/4
08	5	8.0	5/16
10	6	9.5	3/8
12	8	12.7	1/2
16	10	16.0	5/8
19	12	19.0	3/4
25	16	25.4	1
31	20	32.0	1 1/4
38	24	38.0	1 1/2
51	32	50.8	2
60	38	60.0	2 3/8
63	40	63.5	2 1/2
76	48	76.2	3
89	56	88.9	3 1/2
102	64	101.6	4

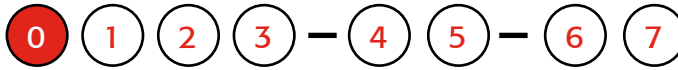
STANDARD THREAD SIZE COMPARISON			
DN	BSP	UNF	NPTF
02	1/8" (28 TPI)	5/16" (24 TPI)	1/8" (27 TPI)
03	-	3/8" (24 TPI)	-
04	1/4" (19 TPI)	7/16" (20 TPI)	1/4" (18 TPI)
05	-	1/2" (20 TPI)	-
06	3/8" (19 TPI)	9/16" (18 TPI)	3/8" (18 TPI)
08	1/2" (14 TPI)	3/4" (16 TPI)	1/2" (14 TPI)
10	5/8" (14 TPI)	7/8" (14 TPI)	-
12	3/4" (14 TPI)	1 1/16" (12 TPI)	3/4" (14 TPI)
14	-	1 3/16" (12 TPI)	-
16	1"	1 5/16" (12 TPI)	1" (11.5 TPI)
19	1 1/4" (11 TPI)	1 5/8" (12 TPI)	1 1/4" (11.5 TPI)
25	1 1/2" (11 TPI)	1 7/8" (12 TPI)	1 1/2" (11.5 TPI)
31	2" (11 TPI)	2 1/1" (12 TPI)	2" (11.5 TPI)

PART NUMBERING SYSTEM

Mining Adaptors



DIGIT "0"



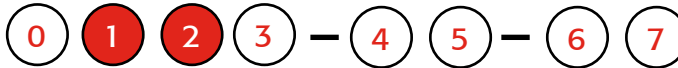
Series Identification Letters

ASA Traditional Staple Adaptor

ASH High Pressure Staple Adaptor

ASAF / ASHF FlushFit Staple Adaptor

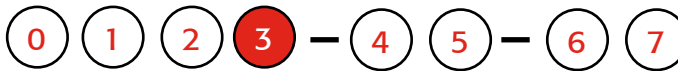
DIGITS "1-2"



Style Code Numbers

Defines the adaptor shape and terminations

DIGIT "3"



Suffix Letter Code

Gives additional information about the adaptor style

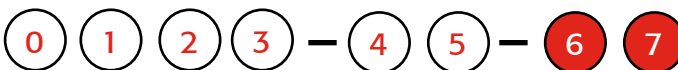
DIGITS "4-5"



*1st Pair Dash Size

States nominal bore size of 1st end

DIGITS "6-7"



*2nd Pair Dash Size

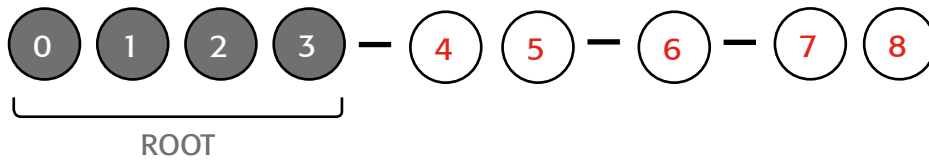
States terminal nominal bore size of 2nd end

*Notes for digits "4-5-6-7"

The following protocol is used for mining adaptors:

1. Threaded male ends have presidency and are stated first
2. Male staple ends are second in rank
3. Female staple ends are in second rank

Mining Ball Valves



DIGIT "0"



Series Identification Letters

ASAV Traditional Staple Ball Valve

ASHV High Pressure Staple Ball Valve

DIGITS "1-2"



Style Code Numbers

Defines the ball valve end styles

DIGIT "3"



Suffix Letter Code

Gives additional information about the end style

DIGITS "4-5"



1st Group Dash Size

States nominal bore size

DIGIT "6"



2nd Group

Defines handle style

DIGITS "7-8"

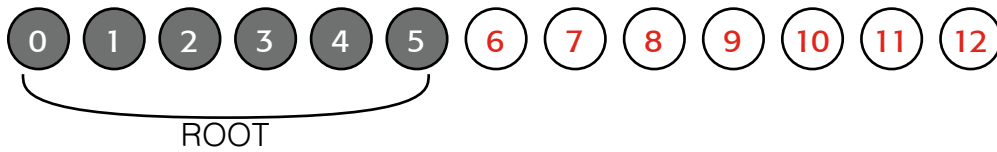


3rd Group

Defines handle colour

PART NUMBERING SYSTEM

Hoses



“H” letter always means “Hoses”



Family

“Five digit number” that defines a specific hose family - see “Hose Family Table”.

Digit “1”	Hose Type
0	Hydraulic rubber hose
2	Thermoplastic hose
3	Traded hose
7	Oil & marine hose
8	Industrial hose
9	PTFE hose

Digits “1-2”	Hose Type
10	Hydraulic rubber hose
16	Textile braided - Traded



Progressive **letter** (A, B, ...) is used to identify an updated structure

In case a **number** is used, it must be read together with digits “7” and “8” to identify the hose’s diameter in mm



Diameter in millimetres

In case digit “6” is a number, the hose diameter in millimetres should be read including it.

Hoses (continued)

DIGIT "9"

0 1 2 3 4 5 6 7 8 9 10 11 12

Value	Package	Marking Technology
0	Box	Ink transfer
B	Reel	Ink transfer
P	Plastic reel	Ink transfer
R	Roll	Ink transfer
W	Wooden reel	Ink transfer
E	Defined in digit "10"	Embossed / embedded
I	Defined in digit "10"	Inkjet
M	Defined in digit "10"	Mylar

DIGIT "10"

0 1 2 3 4 5 6 7 8 9 10 11 12

Value	Package	Special
L	Box (\leq DN51); Wooden reel ($>$ DN51)	Branding with License Number
0	Box	-
B	Reel	-
P	Plastic reel	-
R	Roll	-
W	Wooden reel	-
A	Box	100 ft (spiralled) / 50 ft (GoldenBlast)
Q	Box	40 m (GoldenBlast)
S, V, Z, Y	Box	Special length
C	-	Branding without "Made in..." declaration

DIGIT "11"

0 1 2 3 4 5 6 7 8 9 10 11 12

Value	Special
S, V, Z, Y	Special length
C	Branding without "Made in..." declaration
9	Manuli standard branding
0-8	Private brand

PART NUMBERING SYSTEM

Hoses (continued)

DIGIT 12"



Value

Special

9	Manuli standard branding
0-8	Private brand

Notes for digits “9-10-11-12”

If the above convention is NOT followed then the branding is considered “Private”. Exceptions related to “Manuli Brand” hoses are: x900; xx90; x556; x833; x962; xx97; xx95

Hoses Families

First 6 Digits	Prod. Tech.	Prod. Tech. Description	Family	Family Description
H01007	1	Wire Braided	7	ROCKMASTER/1SN
H01030	1	Wire Braided	30	ROCKMASTER/2SC
H01031	1	Wire Braided; Wire Spiralled	31	SHIELDMASTER/4000
H01032	1	Wire Braided; Wire Spiralled	32	SHIELDMASTER/5000
H01033	1	Wire Braided	33	CPH/2SC
H01035	1	Wire Braided	35	ROCKMASTER/2ST
H01038	1	Wire Braided	38	ROCKMASTER/2SN
H01058	1	Wire Braided	58	EQUATOR/1 BLACK
H01059	1	Wire Braided	59	EQUATOR/1 BLUE
H01101	1	Wire Braided	101	ROCKMASTER/2 PLUS
H01102	1	Wire Braided	102	ETERNITY/2
H01108	1	Wire Braided	108	ROCKMASTER/1SC
H01112	1	Wire Braided	112	TWINPOWER/PLUS
H01122	1	Wire Braided	122	SHIELDMASTER/2 PLUS MINE
H01124	1	Wire Braided	124	FIREND
H01125	1	Wire Braided	125	GOLDENISO/21 ANTIWEAR
H01126	1	Wire Braided	126	GOLDENISO/28 ANTIWEAR
H01128	1	Wire Braided	128	XTRAFLOW/ HT
H01129	1	Wire Braided	129	XTRAFLOW/2WB
H01134	1	Wire Braided	134	GOLDENISO/35 LONGLIFE
H01A32	1	Wire Braided; Wire Spiralled	A32	SHIELDMASTER/6000
H02011	2	Smooth Hoses	11	GOLDENISO/14
H10008	10	Wire Spiralled	8	ROCKMASTER/4SP

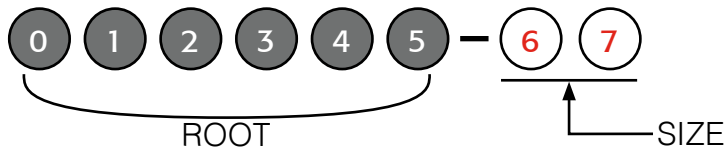
PART NUMBERING SYSTEM

Hoses Families (continued)

First 6 Digits	Prod. Tech.	Prod. Tech. Description	Family	Family Description
H10018	10	Wire Spiralled	18	DIAMONDSPIR
H10031	10	Wire Spiralled	31	ROCKMASTER/12
H10035	10	Wire Spiralled	35	ROCKMASTER/13
H10044	10	Wire Spiralled	44	ROCKMASTER/4SH
H10049	10	Wire Spiralled	49	ROCKMASTER/15
H10086	10	Wire Spiralled	86	SHIELDMASTER/6000 MINE
H10089	10	Wire Spiralled	89	GOLDENISO/45 LONGLIFE
H10091	10	Wire Spiralled	91	XTRAFLOW/4WS
H10093	10	Wire Spiralled	93	GOLDENISO/21 XTRAFLEX
H10095	10	Wire Spiralled	95	GOLDENISO/28 XTRAFLEX
H10096	10	Wire Spiralled	96	GOLDENISO/35 XTRAFLEX
H10097	10	Wire Spiralled	97	GOLDENISO/42 XTRAFLEX
H10098	10	Wire Spiralled	98	GOLDENISO/38 LONGLIFE
H10102	10	Wire Spiralled	102	DIAMONDSPIR/21
H10103	10	Wire Spiralled	103	DIAMONDSPIR/35
H10104	10	Wire Spiralled	104	DIAMONDSPIR/14

PART NUMBERING SYSTEM

Ferrules



Value	Ferrule Type
M	Ferrule MF2000
C	Ferrule or clamp A/C
K	Reusable ferrule



Value	Description
0	Always



Refer to Ferrule Series table.



Value	Issue of Ferrule
0	First issue of ferrule series
1	Second issue of ferrule series
2	Third issue of ferrule series
3	Fourth issue of ferrule series



Value	Special
0	Standard
1	Customised version
2	Customised version
...	...



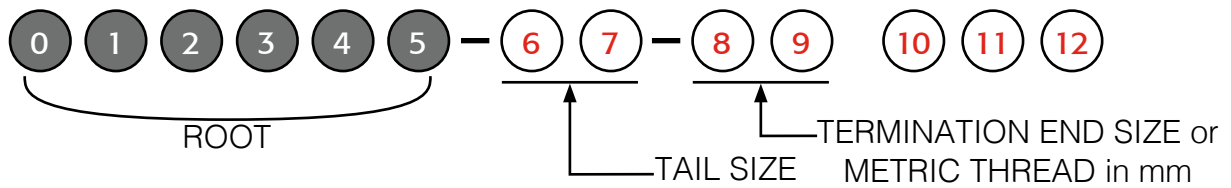
Hose bore size

Ferrule Series

Digits	Description
01	Skive Ferrule for W.B Hoses
03	No-Skive Ferrule for Textile Braided Hoses / Star-Crimp Ferrule AC for RefriStar
04	Reusable Star-Fit Ferrule AC for RefriStar
07	Refrimaster Ferrule AC
08	No-Skive Ferrule for Compact Hoses
09	Skive Ferrule for W.B and W.S Hoses
10	Refrimaster Clamp
13	Double Skive Ferrule for H.D. Spiral Hoses (Interlock 4-6 ply)
14	Double Skive Ferrule for H.D. Spiral Hoses (Interlock 4 ply)
15	Double Skive Ferrule for H.D. Spiral Hoses (Interlock Plus 4 ply)
16	Double Skive Ferrule for H.D. Spiral Hoses (Interlock Plus 6 ply)
17	Double Skive Ferrule for Extra Duty Spiral Hoses (Blastlock-Xtralock 4 ply)
18	Double Skive Ferrule for Extra Duty Spiral Hoses (Blastlock-Xtralock 6 ply)
24	No-Skive Ferrule for Minifit
26	Double Skive Ferrule for Extra Duty Spiral Hoses (Interlock Super)
27	Double Skive Ferrule for Extra Duty Spiral Hoses (Interlock Super 6-8 ply)
28	Double Skive Ferrule for Extra Duty Spiral Hoses (Interlock Super)
31	No-Skive Ferrule for 1 W.B. Hoses
33	No-Skive Ferrule for W.B. Hoses
34	No-Skive Ferrule for W.B. Hoses
54	No-Skive Ferrule for 4 W.S. - 2 W.B. Hoses (Spiralfit)
55	No-Skive Ferrule for 4 W.S. - 6 W.S. Hoses (Spiralfit)
90	Frigostar Clamp

PART NUMBERING SYSTEM

Two-Piece Hydraulic Fittings



DIGIT "0"



Value

Description

M	MF2000 Connector (Multifit, Interlock, Xtralock, ...)
O	Accessories (banjo, flange clamps, bolt, ...)
L	Push-Lock Connector

DIGIT "1"



Value

Description

1	Male or Double connector type Multifit
2	Female or Flange type Multifit
3	Male or Double connector type Interlock and Interlock Plus
4	Female or Flange type Interlock and Interlock Plus
5	Male or Double connector type Xtralock
6	Female or Flange type Xtralock
7	Male or Double connector type Spiralfit
8	Female or Flange type Spiralfit / Accessories (flange clamps and bolt)
A	Male or Double connector type Interlock Super
B	Female or Flange type Interlock Super
S	Female type Minifit
T	Male type Minifit

DIGITS "2-3"



The numbers in these positions specify the termination end or the second tail.
See "Termination Ends Type" table for coding details.

Two-Piece Hydraulic Fittings (continued)

DIGIT "4"



Value

Bending Angle

0	Special Bending Angle
1	Straight
2	22,5° Swept
3	30° Swept
4	Double connector
5	45° Swept
6	60° Swept
7	67,5° Swept
8	Compact type
9	90° Swept

DIGIT "5"



Value

Description

0	No Nut / Male / Double skive Flange type Interlock/InterlockPlus/Xtralock
1	Crimped-back Nut / No-skive or External-skive Flange type Multifit/Spiralfit
2	Thrust-wire Nut
3	Slip-on Nut
4	Double Thrust-wire Nut
7	One-piece flange clamp (only for O8... Codes)
8	ISO/SAE code 61 split flange clamp (only for O8... Codes)
9	ISO/SAE code 62 split flange clamp (only for O8... Codes)

DIGITS "6-7"



Tail size

DIGITS "8-9"



Termination end size

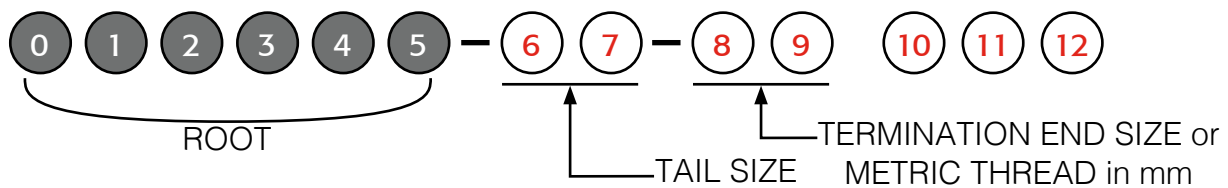
DIGITS "10-11-12"



These digits specify various customisations related to dimensions, threads, drops, ...

PART NUMBERING SYSTEM

One-Piece Hydraulic Fittings



DIGIT "0"



Value

Description

OPB	One-Piece (MF3000) Braided
OPNS	One-Piece (MF3000) No Skive
OPS	One-Piece (MF3000) Spiral
OPK	One-Piece (MF3000) No Skive Kompact
OPF	One-Piece (MF3000) No Skive Flat

DIGIT "1"



Value

Description

1	Male
2	Female or Flange type

DIGITS "2-3"



The numbers in these positions specify the termination end or the second tail.
See "Termination Ends Type" table for coding details.

DIGIT "4"



Value

Bending Angle

0	Special Bending Angle
1	Straight
2	22,5° Swept
3	30° Swept
4	45° Swept
6	60° Swept
7	67,5° Swept
8	Compact type
9	90° Swept

One-Piece Hydraulic Fittings (continued)

DIGIT "5" 0 1 2 3 4 5 — 6 7 — 8 9 10 11 12

Value	Description
0	Flange type Interlock/Xtralock/Multispiral or Male
1	Crimped-back Nut or Flange type Multifit
2	Thrust-wire Nut
3	Slip-on Nut

DIGITS "6-7" 0 1 2 3 4 5 — 6 7 — 8 9 10 11 12

Tail size

DIGITS "8-9" 0 1 2 3 4 5 — 6 7 — 8 9 10 11 12

Termination end size

DIGITS "10-11-12" 0 1 2 3 4 5 — 6 7 — 8 9 10 11 12

These digits specify various customisations related to dimensions, threads, drops, ...

PART NUMBERING SYSTEM

Termination End Types

Digit	Fittings	Q.Safe	Description (Male End)	Description (Female End)
00	00	-	Double connector (same tail in two-ends connectors) / No end (plug)	No end (plug)
01	-	01	BSP Male DIN 3852-11 - ISO 1179-2 Heavy Duty "form E"	Fixed Female GAS JIS B 2351 "type O"
02	-	02	BSP Male Tapered Thread Long	BSP Female Tapered
03	03		BSP Male Parallel Thread O'R Flat Face (ISO 1179-3)	BSP Banjo
04	-	04	BSP Male Bulkhead	BSP Fixed Female DIN 3852-2 "form X" / ISO 1179-1
05	05	05	BSP Male 60° cone seat BS5200 / ISO 8434-6	BSP Female 60° cone BS5200 / ISO 8434-6
06	06	-	BSP Male Flat Face	BSP Female Flat seat
07	07	-	BSPT Male	JIS B 8363 (BSP - Nissan) Swivel Female
08	08	08	Metric Bolt DIN 7643	BSP O-Ring Female 60° cone BS5200 / ISO 8434-6
09	09	-	BSP Male O'Ring Boss Adjustable ISO 1179-3	Metric Banjo DIN 7642
10	10	-	Metric male 60° cone superlight DIN 3863	Metric female 60° cone superlight DIN 3863
11	11	11	Metric male 24° cone seat light type DIN 3861 / ISO 8434-1	-
12	12	12	Metric male 24° cone seat heavy type DIN 3861 / ISO 8434-1	Metric Female 24° cone O'Ring heavy type DIN 3865 / ISO 8434-1 Long Drop
13	13	-	-	Metric Female Multiseal cone DIN 3868
14		14	Metric Male DIN 3852-11 "form E" b/ ISO 9974-2	"Metric Fixed Female DIN 3852-1 ""form X"" and ""form Y"""
15	15	-	-	Metric Female 24° cone O'Ring light type DIN 3865 / ISO 8434-1
16	16	-	-	Metric Female 24° cone O'Ring heavy type DIN 3865 / ISO 8434-1
17	17	-	French Millimetric metric male 24° cone seat	French Millimetric metric female
18	18	-	French GAZ metric male 24° cone seat	French GAZ metric female
19	-	19	Metric Male (Adjustable + Non-Adjustable Heavy) ISO 6149-2	Metric Fixed Female ISO 6149-1
20	20	-	-	DIN Metric Standpipe L.T. DIN 2353
21	21	-	-	DIN Metric Standpipe H.T. DIN 2353

PART NUMBERING SYSTEM

Termination End Types (continued)

Digit	Fittings	Q.Safe	Description (Male End)	Description (Female End)
23	-	23	JIC Bulkhead male 37° cone ISO 8434-2 / SAE J514	-
24	24	24	ORFS male ISO 8434-3 / SAE J1453	ORFS female ISO 8434-3 / SAE J1453
25	25	25	JIC male (37° cone) ISO 8434-2 / SAE J514	JIC female (37° cone seat) ISO 8434-2 / SAE J514
26	26	-	-	SAE female (45° cone seat) SAE J512
27	27	27	ORFS Bulkhead male ISO 8434-3 / SAE J1453	JIC female double hexagon 37° cone seat
28	28	28	NPTF Male 60° cone seat SAE J476a	NPSM Swivel Female 60° cone SAE J514
30	30	30	Male O'Ring Boss type SAE J1926-3	Female Port SAE J1926-1
32	-	32	Male O'Ring Boss (Adjustable + Non-Adjustable Heavy) SAE J1926-2	-
33	33	-	Flange head (not including Clamps) Code 61 without O'Ring (adapters)	Flange ISO/SAE 61 (ISO 6162-1 / SAE J518 code 61)
34	34	34	API Male	NPTF Fixed Female SAE J476a
35	35	-	NPT Male	NPT Fixed Female
36	36	-	Flange head (not including Clamps) Code 62 without O'Ring (adapters)	Flange ISO/SAE 62 (ISO 6162-2 / SAE J518 code 62)
37	37	37	Metric male 60° cone superlight DIN 3863 Bulkhead	Flange ISO/SAE 62 Plus / Flange (A/C)
38	38	-	JIS B8363 Toyota male	JIS B 8363 (Toyota) Swivel Female
39	39	-	JIS male O-Ring boss - JIS B 8363 type CO	SUPERCAT flange
40	40	-	Komatsu Metric male 60° cone seat	JIS B 8363 (Komatsu) Swivel Female
41	41	-	NPTF Swivel Male SAE J476a	Komatsu Flange
43	43	-	SAE O'Ring Boss Swivel Male	-
44	44	-	Male BSPP Flat Face Bonded Washer	ORFS Female Long Drop Elbow ISO 12151-1 / SAE
46	46	-	Super Staple Male	Super Staple Fixed Female
47	47	-	Super Staple Male (only for Interlock Plus and Spiralfit)	JIC (37° cone) Female Long Drop Elbow ISO 12151-5 / SAE J516
48	48	-	Staple Male SAE J1467	Staple Fixed Female SAE J1467
49	49	-	-	Wash Cleaning
52	52	-	SAE 45° cone Metric Thread	SAE 45° cone Metric Thread
55	55	-	BSP Parallel Thread 60° cone BS5200 (only for Interlock/Xtralock tail)	BSP Parallel Thread 60° cone BS5200 (only for Interlock/Xtralock tail)

PART NUMBERING SYSTEM

Termination End Types (continued)

Digit	Fittings	Q.Safe	Description (Male End)	Description (Female End)
56	56	-	Union Fitting (Male SUB)	Union Fitting (Female SUB)
57	-	-	BSP Male Tapered Thread - JIS B 8363	BSP Swivel Female (only for Interlock/Xtralock tail)
58	58	-	GOST Male	BSP Parallel Thread O'Ring 60° cone BS5200 (only for Interlock/Xtralock tail)
59	59	-	Flushfit Male Low Pressure	Flushfit Fixed Female Low Pressure
60	-	-	Metric thread 74° cone	Metric thread 74° cone
61	61		Flushfit Male High Pressure	Flushfit Fixed Female High Pressure
62	62	-	Male Metric Thread 24° cone heavy type DIN 3861 (only for Interlock/Xtralock tail)	Flushfit Swivel Female Low Pressure
63	63	-	Type M Female 58° cone	-
64	-	-	BSP Male front seal Flushfit Swivel Female High Pressure	-
66	66	-	-	Metric Female 24° cone O'Ring heavy type DIN 3865 / ISO 8434-2 (only for Blastlock / Xtralock); Grayloc Hub (only for Drilling)
67	67	-	Standard SSKV	Standard SSKV
68	68	-	Super SSKV	Super SSKV
74	74	-	ORFS type (only for Interlock/Xtralock tail)	ORFS type (only for Interlock/Xtralock tail)
75	75	-	JIC Thread 37° cone (only for Interlock/Xtralock tail)	JIC Thread 37° cone (only for Interlock/Xtralock tail)
76	76	-	Expansion valve short pilot (A/C)	ISO 6164 FLANGE type 40MPa / Expansion valve (A/C)
77	-	77	DIN Bulkhead Male 24° cone Light type ISO 8434-1	-
78	78	-	"NPTF Male 60° cone seat SAE J476a (only for Interlock	Blastlock/Xtralock)"
79	79	-	Fixed Male O'Ring seat (A/C)	HUB API 16A (type 16BX) / Female O'Ring (A/C)
80	80	-	Male Swivel O'Ring (A/C)	FLANGE API 6A (type 6B/6BX) / O'Ring short pilot (A/C)
81	81	-	Male Grooved	French GAZ Standpipe
82	-	82	French GAZ Bulkhead metric male 24° cone seat	Staple Lock Swivel Female
83	83	-	4-Bolts Flange head Code 61 without O'Ring (adapters)	Flange ISO/SAE 61 (ISO 6162-1 / SAE J518 code 61) / 4-Bolts Flange head Code 61 (adapters)

Termination End Types (continued)

Digit	Fittings	Q.Safe	Description (Male End)	Description (Female End)
84	84	-	-	Xtraflange 61 (ISO6162-1 / SAE J518 code 61 port compatible)
85	85	-	-	XtraFlange 62 (ISO 6162-2 / SAE J518 code 62 port compatible)
86	86	-	4-Bolts Flange head Code 62 without O'Ring (adapters)	Flange ISO/SAE 62 (ISO 6162-2 / SAE J518 code 62) - only for Xtralock / 4-Bolts Flange head Code 62 (Adapters)
87	87	87	DIN Bulkhead Male 24° cone Heavy type ISO 8434-1	ASME B16.5 FLANGE / SDB compressor (A/C)
88	-	-	Male Metric Tapered Thread	Male Metric Tapered Thread
89	89	-	SUPERCAT flange (only for Interlock/Xtralock tail)	SUPERCAT flange (only for Interlock/Xtralock tail)
91	91	-	-	Gear Pump Flange
92	92	-	-	NSD (Non Stop Driller) Clamp Connection
95	95	-	Brazing Pipe (Fittings)	Brazing socket (Fittings) / Beveled To Weld (only Drilling)
97	97	-	Metric Male with 90° Male Cone ISO 4038	Metric Female DIN 74225

Digits	Accessories for connectors (O8...)
33	Clamps for flange ISO/SAE 61
36	Clamps for flange ISO/SAE 62
85	Xtraflange Clamps
02	BSP Bolt
08	BSP Bolt Double Hole
08	Metric Bolt DIN 7643
2H	Cartridge for Easy-Fit High Pressure
00	Drilling Safety Clamp
00	Drilling Lift Eye
20	Anti-Kink
21	Metal Sleeve
41	2 Holes Flange Clamp
42	Armour - Joint
81	Clamps for Male Grooved

Digits	Easy-Fit / Fast-Fit
1H	Oyster High Pressure
2H	Easy-Fit High Pressure (Cejn)
1L	Easy-Fit Low Pressure (Oyster)
3H	Fast-Fit

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