



Body Size

1/8" up to 2 1/2"

ISO B-Profile

60-Series

Medium Pressure



Working Pressure

Low Cycle, non-pulsating pressure rating

Body Size	Steel	Stainl. Steel	Brass
1/8"	350 bar	350 bar	210 bar
1/4"	350 bar	350 bar	255 bar
3/8"	280 bar	350 bar	185 bar
1/2"	280 bar	350 bar	240 bar
3/4"	175 bar	210 bar	150 bar
1"	140 bar	210 bar	105 bar
1 1/2"	105 bar	105 bar	105 bar
2 1/2"	105 bar	-	85 bar

ANSI/ISO Pressure Rating

Body Size	Steel	Stainl. Steel	Brass
1/8"	350 bar	140 bar	70 bar
1/4"	350 bar	140 bar	70 bar
3/8"	280 bar	105 bar	70 bar
1/2"	280 bar	105 bar	70 bar
3/4"	175 bar	105 bar	70 bar
1"	140 bar	70 bar	70 bar
1 1/2"	70 bar	70 bar	55 bar
2 1/2"	70 bar	-	55 bar

Technical Description

The 60 series plug profiles conform to ISO Standard 7241-1 series B and are compatible with other series complying with the same standard.

Advantages

A poppet with crimped seal assures a maximum sealing at low flow rates and prevents seal washout at high flow rates. A large number of locking balls distribute the work load evenly while providing alignment for the two parts of the coupling. Steel versions feature PTFE back-up ring which prevents seal damage for high pressure applications. Brass couplers have a double O-ring seal for redundancy in low pressure and vacuum applications.

Sleeve-Lock:

60 series couplers are available with safety locking sleeves. Please add the suffix **SL** to the part number, e.g. **H3-62-SL**.

Working Temperature

-40°C up to +110°C (NBR)
-20°C up to +200°C (FKM)
depending on the medium.
Special seals are available on request (see page 6).

Heavy Duty Nipples

Parker 60 series heavy duty nipples are recommended for extended life in applications where high cycle rates and pressure surges are encountered. Machined from high tensile steel and specially hardened.

To specify a heavy duty nipple, add the prefix **HD** to the steel series part number, thus:
HDH2-63.

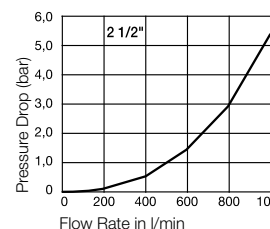
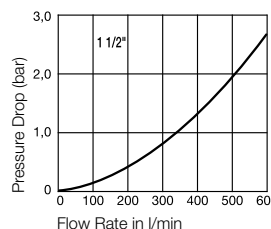
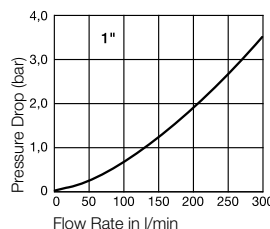
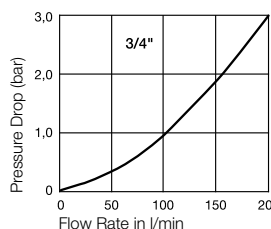
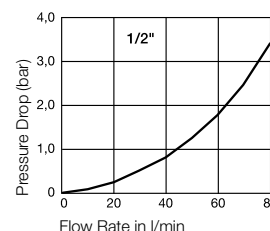
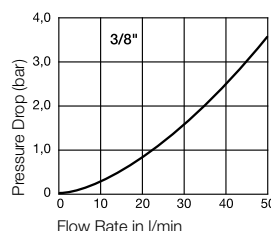
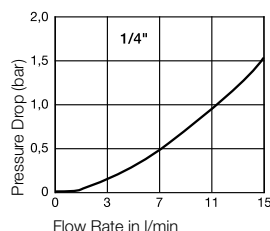
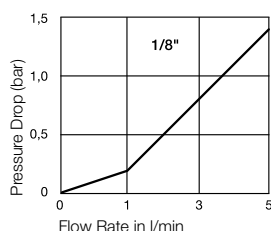
Applications

- Semiconductor industry, steel manufacturing
- Pneumatic and hydraulic hand tools
- Food and bottling industry
- Boating, shipbuilding and offshore industry
- Pharmaceutical industry, laboratories
- Transport
- Power generation plants, hydroelectric power stations

Material Coupling	Brass	Steel	AISI 303	AISI 316
Coupling Body	Brass	Steel	AISI 303	AISI 316
Sleeve	Brass	Steel	AISI 303	AISI 316
Back-up Ring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Valve	Brass	Steel	AISI 303	AISI 316
Springs	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Locking Balls	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Seals	NBR	NBR	NBR	FKM
Valve Holder	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Thread Body	Brass	Steel	AISI 303	AISI 316

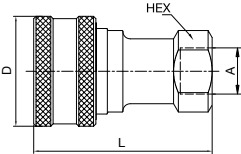
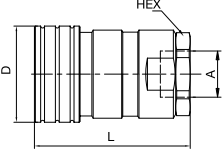
Material Plug	Brass	Steel	AISI 303	AISI 316
Plug Body	Brass	Steel	AISI 303	AISI 316
Valve	Brass	Steel	AISI 303	AISI 316
Springs	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Seals	NBR	NBR	NBR	FKM
Valve Holder	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Thread Body	Brass	Steel	AISI 303	AISI 316

Flow Capacity with Oil with Viscosity of 43cSt at 38°C as per ISO 7241/2-2000



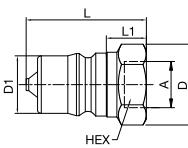
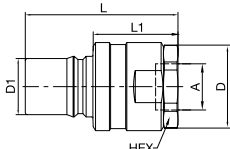
Couplings

60-Series Brass

	Body Size	Connection A	Thread	Hex	L mm	L1 mm	D mm	D1 mm	Version	Weight gr.	Part Number
 Female Thread	1/8"	1/8"	BSPP	11/16"	48,3		24,4		Brass	87	BH1-60-BSPP
	1/8"	1/8" - 27	NPTF	11/16"	48,3		24,4		Brass	80	BH1-60
	1/4"	1/4"	BSPP	13/16"	61,2		29		Brass	158	BH2-60-BSPP
	1/4"	1/4" - 18	NPTF	13/16"	57,4		29		Brass	145	BH2-60
	3/8"	3/8"	BSPP	1"	69,9		35,6		Brass	260	BH3-60-BSPP
	3/8"	3/8" - 18	NPTF	7/8"	63,2		35,4		Brass	195	BH3-60
	1/2"	1/2"	BSPP	1 1/8"	77,5		45		Brass	383	BH4-60-BSPP
	1/2"	1/2" - 14	NPTF	1 1/8"	72,9		45		Brass	365	BH4-60
	3/4"	3/4"	BSPP	1 5/16"	93,2		54,4		Brass	642	BH6-60-BSPP
	3/4"	3/4" - 14	NPTF	1 5/16"	90,4		54,4		Brass	630	BH6-60
	1"	1"	BSPP	1 5/8"	106,2		64		Brass	970	BH8-60-BSPP
	1"	1" - 11 1/2	NPTF	1 5/8"	106,2		64		Brass	980	BH8-60
 Female Thread	1 1/2"	1 1/4"	BSPP	2 3/8"	123,4		76,2		Brass	2145	BH12-60L-BSPP
	1 1/2"	1 1/2"	BSPP	2 3/8"	127,3		76,2		Brass	2130	BH12-60N-BSPP
	1 1/2"	1 1/4" - 11 1/2	NPTF	2 3/8"	123,4		76,2		Brass	2080	BH12-60L
	1 1/2"	1 1/2" - 11 1/2	NPTF	2 3/8"	123,4		76,2		Brass	2080	BH12-60N
	2 1/2"	2"	BSPP	3 3/4"	145		101,1		Brass	5500	BH2016-60-BSPP
	2 1/2"	2" - 11 1/2	NPTF	3 3/4"	141,5		101,1		Brass	5015	BH2016-60

Plugs

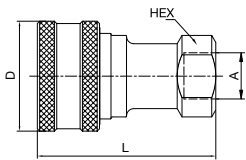
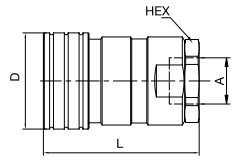
60-Series Brass

	Body Size	Connection A	Thread	Hex	L mm	L1 mm	D mm	D1 mm	Version	Weight gr.	Part Number
 Female Thread	1/8"	1/8"	BSPP	9/16"	32	10,5	16,4	10,8	Brass	19	BH1-61-BSPP
	1/8"	1/8" - 27	NPTF	9/16"	32	11,2	16,5	10,8	Brass	19	BH1-61
	1/4"	1/4"	BSPP	3/4"	42,9	16,6	21,9	14,2	Brass	45	BH2-61-BSPP
	1/4"	1/4" - 18	NPTF	3/4"	39,1	14	21,9	14,2	Brass	46	BH2-61
	3/8"	3/8"	BSPP	7/8"	49,3	19,7	25,7	19,1	Brass	74	BH3-61-BSPP
	3/8"	3/8" - 18	NPTF	7/8"	42,7	13,1	25,6	19,1	Brass	62	BH3-61
	1/2"	1/2"	BSPP	1 1/8"	54,1	21,1	32,9	23,5	Brass	131	BH4-61-BSPP
	1/2"	1/2" - 14	NPTF	1 1/8"	49,3	17,5	33	23,5	Brass	118	BH4-61
	3/4"	3/4"	BSPP	1 3/8"	64,5	21,9	40,3	31,4	Brass	235	BH6-61-BSPP
	3/4"	3/4" - 14	NPTF	1 3/8"	61,7	20,1	40,3	31,4	Brass	229	BH6-61
	1"	1"	BSPP	1 5/8"	73,8	25,2	47,2	37,7	Brass	368	BH8-61-BSPP
	1"	1" - 11 1/2	NPTF	1 5/8"	73,9	33,4	47,8	37,7	Brass	378	BH8-61
 Female Thread	1 1/2"	1 1/4"	BSPP	2 3/8"	120,9	67,5	74,7	44,5	Brass	1450	BH12-61L-BSPP
	1 1/2"	1 1/2"	BSPP	2 3/8"	124,7	67,5	74,7	44,5	Brass	1450	BH12-61N-BSPP
	1 1/2"	1 1/4" - 11 1/2	NPTF	2 3/8"	120,9	67,3	69,9	44,5	Brass	1340	BH12-61L
	1 1/2"	1 1/2" - 11 1/2	NPTF	2 3/8"	120,9	67,3	69,9	44,5	Brass	1340	BH12-61N
	2 1/2"	2"	BSPP	3 3/4"	142,7	77,3	104,1	63,2	Brass	3855	BH2016-61-BSPP
	2 1/2"	2" - 11 1/2	NPTF	3 3/4"	139,2	73,7	104,1	63,2	Brass	3530	BH2016-61

⚠ Please consider our security advices on the pages 12/13 ⚠

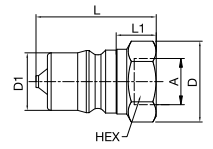
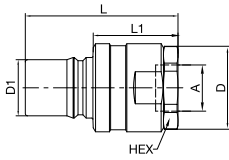
Couplings

60-Series Steel

	Body Size	Connection A	Thread	Hex	L mm	L1 mm	D mm	D1 mm	Version	Weight gr.	Part Number
 Female Thread	1/8"	1/8"	BSPP	11/16"	48,3		24,4		Steel	81	H1-62-BSPP
	1/8"	1/8" - 27	NPTF	11/16"	48,3		24,4		Steel	81	H1-62
	1/4"	1/4"	BSPP	13/16"	61,2		29,0		Steel	130	H2-62-BSPP
	1/4"	1/4" - 18	NPTF	13/16"	57,4		29,0		Steel	138	H2-62
	3/8"	3/8"	BSPP	1"	69,9		35,6		Steel	241	H3-62-BSPP
	3/8"	3/8" - 18	NPTF	7/8"	63,2		35,4		Steel	184	H3-62
	1/2"	1/2"	BSPP	1 1/8"	77,5		45,0		Steel	360	H4-62-BSPP
	1/2"	1/2" - 14	NPTF	1 1/8"	72,9		45,0		Steel	341	H4-62
	3/4"	3/4"	BSPP	1 5/16"	93,2		54,4		Steel	602	H6-62-BSPP
	3/4"	3/4" - 14	NPTF	1 5/16"	90,4		54,4		Steel	592	H6-62
	1"	1"	BSPP	1 5/8"	106,2		64,0		Steel	906	H8-62-BSPP
	1"	1" - 11 1/2	NPTF	1 5/8"	106,2		64,0		Steel	914	H8-62
 Female Thread	1 1/2"	1 1/4"	BSPP	2 3/8"	123,4		76,2		Steel	2135	H12-62L-BSPP
	1 1/2"	1 1/2"	BSPP	2 3/8"	127,3		76,2		Steel	2060	H12-62N-BSPP
	1 1/2"	1 1/4" - 11 1/2	NPTF	2 3/8"	123,4		76,2		Steel	2130	H12-62L
	1 1/2"	1 1/2" - 11 1/2	NPTF	2 3/8"	123,4		76,2		Steel	2130	H12-62N
	2 1/2"	2"	BSPP	3 3/4"	145		104,1		Steel	4800	H2016-62-BSPP
	2 1/2"	2" - 11 1/2	NPTF	3 3/4"	141,5		104,1		Steel	4800	H2016-62
	2 1/2"	2 1/2" - 8	NPTF	3 3/4"	153,4		104,1		Steel	4950	H2020-62

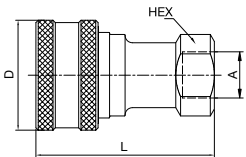
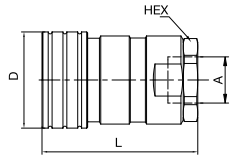
Plugs

60-Series Steel

	Body Size	Connection A	Thread	Hex	L mm	L1 mm	D mm	D1 mm	Version	Weight gr.	Part Number
 Female Thread	1/8"	1/8"	BSPP	9/16"	32	10,5	16,4	10,8	Steel	18	H1-63-BSPP
	1/8"	1/8" - 27	NPTF	9/16"	32,0	11,2	16,5	10,8	Steel	18	H1-63
	1/4"	1/4"	BSPP	3/4"	42,9	16,6	21,9	14,2	Steel	38	H2-63-BSPP
	1/4"	1/4" - 18	NPTF	3/4"	39,1	14,0	21,9	14,2	Steel	36	H2-63
	3/8"	3/8"	BSPP	7/8"	49,3	19,7	25,7	19,1	Steel	68	H3-63-BSPP
	3/8"	3/8" - 18	NPTF	7/8"	42,7	13,1	25,6	19,1	Steel	56	H3-63
	1/2"	1/2"	BSPP	1 1/8"	54,1	21,1	32,9	23,5	Steel	122	H4-63-BSPP
	1/2"	1/2" - 14	NPTF	1 1/8"	49,3	17,5	33	23,5	Steel	109	H4-63
	3/4"	3/4"	BSPP	1 3/8"	64,5	21,9	40,3	31,4	Steel	217	H6-63-BSPP
	3/4"	3/4" - 14	NPTF	1 3/8"	61,7	20,1	40,3	31,4	Steel	210	H6-63
	1"	1"	BSPP	1 5/8"	73,8	25,2	47,2	37,7	Steel	340	H8-63-BSPP
	1"	1" - 11 1/2	NPTF	1 5/8"	73,9	33,4	47,8	37,7	Steel	351	H8-63
 Female Thread	1 1/2"	1 1/4"	BSPP	2 3/8"	120,9	67,5	69,9	44,5	Steel	1410	H12-63L-BSPP
	1 1/2"	1 1/2"	BSPP	2 3/8"	124,7	71,1	69,9	44,5	Steel	1280	H12-63N-BSPP
	1 1/2"	1 1/4" - 11 1/2	NPTF	2 3/8"	120,9	67,3	69,9	44,5	Steel	1365	H12-63L
	1 1/2"	1 1/2" - 11 1/2	NPTF	2 3/8"	120,9	67,3	69,9	44,5	Steel	1405	H12-63N
	2 1/2"	2"	BSPP	3 3/4"	142,7	69,4	104,1	63,2	Steel	3580	H2016-63-BSPP
	2 1/2"	2" - 11 1/2	NPTF	3 3/4"	139,2	65,9	104,1	63,2	Steel	3580	H2016-63
	2 1/2"	2 1/2" - 8	NPTF	3 3/4"	151,1	83,4	104,1	63,2	Steel	3700	H2020-63

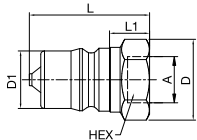
Couplings

60-Series Stainless Steel

	Body Size	Connection A	Thread	Hex	L mm	L1 mm	D mm	D1 mm	Version	Weight gr.	Part Number
 Female Thread	1/8"	1/8"	BSPP	11/16"	48,3		24,4		AISI 303	81	SH1-62-BSPP
	1/8"	1/8"	BSPP	14 mm	48,3		24,0		AISI 316	74	SSH1-62Y-BSPP*
	1/8"	1/8" - 27	NPTF	11/16"	48,3		24,4		AISI 303	81	SH1-62
	1/8"	1/8" - 27	NPTF	11/16"	48,3		24,4		AISI 316	74	SSH1-62Y*
	1/4"	1/4"	BSPP	19 mm	61,2		29,0		AISI 303	129	SH2-62-BSPP
	1/4"	1/4"	BSPP	13/16"	61,2		29,0		AISI 316	132	SSH2-62Y-BSPP*
	1/4"	1/4" - 18	NPTF	13/16"	57,4		29,0		AISI 303	128	SH2-62
	1/4"	1/4" - 18	NPTF	13/16"	57,4		29,0		AISI 316	138	SSH2-62Y*
	3/8"	3/8"	BSPP	1"	69,9		35,6		AISI 303	245	SH3-62-BSPP
	3/8"	3/8"	BSPP	1"	69,9		35,6		AISI 316	187	SSH3-62Y-BSPP*
	3/8"	3/8" - 18	NPTF	7/8"	63,2		35,4		AISI 303	186	SH3-62
	3/8"	3/8" - 18	NPTF	7/8"	63,2		35,4		AISI 316	180	SSH3-62Y*
	1/2"	1/2"	BSPP	1 1/8"	77,5		45,0		AISI 303	360	SH4-62-BSPP
	1/2"	1/2"	BSPP	1 1/8"	77,5		45,0		AISI 316	367	SSH4-62Y-BSPP*
	1/2"	1/2" - 14	NPTF	1 1/8"	72,9		45,0		AISI 303	341	SH4-62
	1/2"	1/2" - 14	NPTF	1 1/8"	72,9		45,0		AISI 316	346	SSH4-62Y*
	3/4"	3/4"	BSPP	1 5/16"	93,2		54,4		AISI 303	603	SH6-62-BSPP
	3/4"	3/4"	BSPP	1 5/16"	93,2		54,4		AISI 316	610	SSH6-62Y-BSPP*
	3/4"	3/4" - 14	NPTF	1 5/16"	90,4		54,4		AISI 303	595	SH6-62
	3/4"	3/4" - 14	NPTF	1 5/16"	90,4		54,4		AISI 316	592	SSH6-62Y*
	1"	1"	BSPP	1 5/8"	106,2		64,0		AISI 303	908	SH8-62-BSPP
	1"	1"	BSPP	41 mm	106,2		64,0		AISI 316	899	SSH8-62Y-BSPP*
	1"	1" - 11 1/2	NPTF	1 5/8"	106,2		64,0		AISI 303	924	SH8-62
	1"	1" - 11 1/2	NPTF	1 5/8"	106,2		64,0		AISI 316	901	SSH8-62Y*
 Female Thread	1 1/2"	1 1/2"	BSPP	2 1/2"	127,3		76,2		AISI 303	2090	SH12-62N-BSPP
	1 1/2"	1 1/2" - 11 1/2	NPTF	2 3/8"	123,4		76,2		AISI 303	2090	SH12-62N

Plugs

60-Series Stainless Steel

	Body Size	Connection A	Thread	Hex	L mm	L1 mm	D mm	D1 mm	Version	Weight gr.	Part Number
 Female Thread	1/8"	1/8"	BSPP	9/16"	32,0	10,5	16,4	10,8	AISI 303	18	SH1-63-BSPP
	1/8"	1/8"	BSPP	17 mm	32,0	10,5	19,6	10,8	AISI 316	22	SSH1-63Y-BSPP*
	1/8"	1/8" - 27	NPTF	9/16"	32,0	11,2	16,5	10,8	AISI 303	18	SH1-63
	1/8"	1/8" - 27	NPTF	9/16"	32,0	11,2	16,5	10,8	AISI 316	18	SSH1-63Y*
	1/4"	1/4"	BSPP	19 mm	39,1	16,6	21,9	14,2	AISI 303	36	SH2-63-BSPP
	1/4"	1/4"	BSPP	3/4"	42,9	16,6	21,9	14,2	AISI 316	42	SSH2-63Y-BSPP*
	1/4"	1/4" - 18	NPTF	3/4"	39,1	14,0	21,9	14,2	AISI 303	37	SH2-63
	1/4"	1/4" - 18	NPTF	3/4"	39,1	14,0	21,9	14,2	AISI 316	37	SSH2-63Y*

*Suffix Y designates FKM seal.

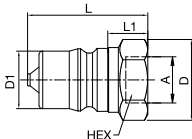
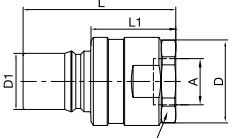
⚠ Please consider our security advices on the pages 12/13 ⚠

Ball Locking
ISO Standard

Medium Pressure

Plugs

60-Series Stainless Steel

	Body Size	Connection A	Thread	Hex	L mm	L1 mm	D mm	D1 mm	Version	Weight gr.	Part Number
 Female Thread	3/8"	3/8"	BSPP	7/8"	49,3	19,7	25,7	19,1	AISI 303	69	SH3-63-BSPP
	3/8"	3/8"	BSPP	7/8"	49,3	19,7	25,7	19,1	AISI 316	60	SSH3-63Y-BSPP*
	3/8"	3/8" - 18	NPTF	7/8"	42,7	13,1	25,6	19,1	AISI 303	58	SH3-63
	3/8"	3/8" - 18	NPTF	7/8"	42,7	13,1	25,6	19,1	AISI 316	55	SSH3-63Y*
	1/2"	1/2"	BSPP	1 1/8"	54,1	21,1	32,9	23,5	AISI 303	122	SH4-63-BSPP
	1/2"	1/2"	BSPP	1 1/8"	54,1	21,1	32,9	23,5	AISI 316	123	SSH4-63Y-BSPP*
	1/2"	1/2" - 14	NPTF	1 1/8"	49,3	17,5	33,0	23,5	AISI 303	109	SH4-63
	1/2"	1/2" - 14	NPTF	1 1/8"	49,3	17,5	33,0	23,5	AISI 316	109	SSH4-63Y*
	3/4"	3/4"	BSPP	1 3/8"	64,5	21,9	40,3	31,4	AISI 303	217	SH6-63-BSPP
	3/4"	3/4"	BSPP	1 3/8"	64,5	21,9	40,3	31,4	AISI 316	218	SSH6-63-BSPP*
	3/4"	3/4" - 14	NPTF	1 3/8"	61,7	20,1	40,3	31,4	AISI 303	212	SH6-63
	3/4"	3/4" - 14	NPTF	1 3/8"	61,7	20,1	40,3	31,4	AISI 316	210	SSH6-63Y*
	1"	1"	BSPP	1 5/8"	73,8	25,2	47,2	37,7	AISI 303	345	SH8-63-BSPP
	1"	1"	BSPP	1 5/8"	73,8	25,2	47,2	37,7	AISI 316	340	SH8-63Y-BSPP*
	1"	1" - 11 1/2	NPTF	1 5/8"	73,9	33,4	47,8	37,7	AISI 303	356	SH8-63
	1"	1" - 11 1/2	NPTF	1 5/8"	73,9	33,4	47,8	37,7	AISI 316	345	SSH8-63Y*
 Female Thread	1 1/2"	1 1/2"	BSPP	2 1/2"	124,7	67,5	69,9	44,5	AISI 303	1315	SH12-63N-BSPP
	1 1/2"	1 1/2" - 11 1/2	NPTF	2 3/8"	120,9	67,3	69,9	44,5	AISI 303	1315	SH12-63N

* Suffix Y designates FKM seal.

Dust Protection

60-Series

	Body Size	Version	Material	Part Number
	1/8"	for coupling	Aluminium	H1-65
	1/8"	for coupling	Rubber	H1-65M
	1/8"	for plug	Aluminium	H1-66
	1/8"	for plug	Rubber	H1-66M
	1/4"	for coupling	Aluminium	H2-65
	1/4"	for coupling	Rubber	H2-65M
	1/4"	for plug	Aluminium	H2-66
	1/4"	for plug	Rubber	H2-66M
	3/8"	for coupling	Aluminium	H3-65
	3/8"	for coupling	Rubber	H3-65M
	3/8"	for plug	Aluminium	H3-66
	3/8"	for plug	Rubber	H3-66M

Dust Protection

60-Series

Body Size	Version	Material	Part Number
1/2"	for coupling	Aluminium	H4-65
1/2"	for coupling	Rubber	H4-65M
1/2"	for plug	Aluminium	H4-66
1/2"	for plug	Rubber	H4-66M
3/4"	for coupling	Aluminium	H6-65
3/4"	for coupling	Rubber	H6-65M
3/4"	for plug	Aluminium	H6-66
3/4"	for plug	Rubber	H6-66M
1"	for coupling	Aluminium	H8-65
1"	for coupling	Rubber	H8-65M
1"	for plug	Aluminium	H8-66
1"	for plug	Rubber	H8-66M
1 1/2"	for coupling	Aluminium	H12-65
1 1/2"	for plug	Aluminium	H12-66

Seal-Kit

60-Series

Body Size	Version	Material	Part Number
1/8"	Body Seal	NBR	020013N0674
1/8"	Body Seal	FKM	020013V0747
1/8"	Back-up Ring ²	PTFE	H67A-28
1/4"	Body Seal	NBR	020015N0674
1/4"	Body Seal	FKM	020015V0747
1/4"	Back-up Ring ²	PTFE	H67C-28
3/8"	Body Seal	NBR	020116N0674
3/8"	Body Seal	FKM	020116V0747
3/8"	Back-up Ring ²	PTFE	4118007
1/2"	Body Seal	NBR	020213N0674
1/2"	Body Seal	FKM	020213V0747
1/2"	Back-up Ring ²	PTFE	4128002
3/4"	Body Seal	NBR	020218N0674
3/4"	Body Seal	FKM	020218V0747
3/4"	Back-up Ring ²	PTFE	4148001
1"	Body Seal	NBR	020222N0674
1"	Body Seal	FKM	020222V0747
1"	Back-up Ring ²	PTFE	4158001
1 1/2"	Body Seal	NBR	020224N0674 ¹
2 1/2"	Body Seal	NBR	020333N0674

¹ Two body seals are necessary

² Brass 60 series couplers use two O-rings but do not use a back-up ring.