



**Wilo Abrasive Separator
SCP and NL Kits**

Installation and operating instructions

1 Description

The Abrasive (Sediment) Separator [AS] is used to remove fine dirt and abrasives from liquid streams where maximum purity is essential. Feed is introduced tangentially into the cyclone at sufficient pressure to create a high gravity vortex effect.

Sand, dirt and other very fine solids are thrown to the walls of the cyclone and pass downwards to the underflow outlet for removal.

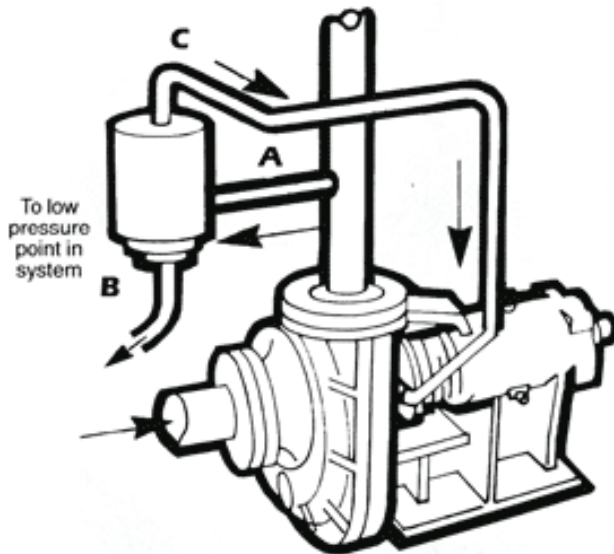
Cleaned liquid spins into the center of the cyclone and is forced upward and out the overflow discharge. This clean stream is then routed through tubing to the place of usage—the mating surfaces of the shaft seals.

The pump provides all the pressure drop energy that is needed to provide the separation.

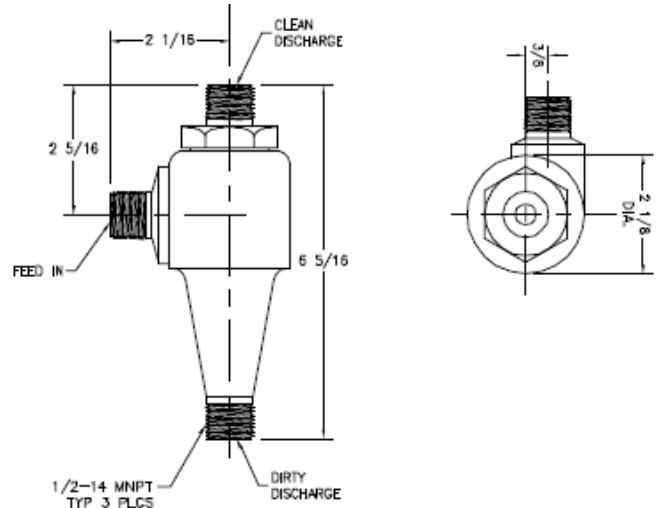


Below is example of a typical abrasive separator installation on a centrifugal pump to provide clean, abrasive-free injection flow for flushing the surfaces of a mechanical shaft seal.

- "A" is the feed inlet to the cyclone
- "B" is particle-bearing underflow return (dirty discharge)
- "C" is clean overflow routed to the seal (clean discharge)

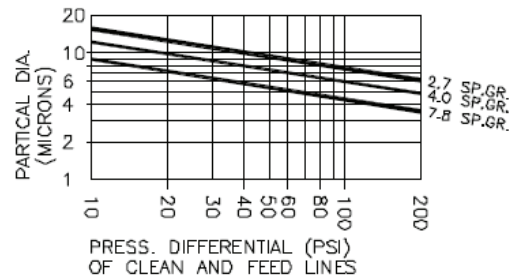


2 Performance Characteristics



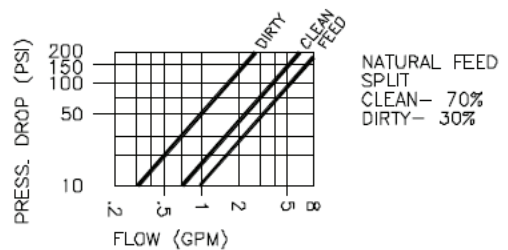
2.1 Particle Removal for Water at Different Specific Gravities

PARTIAL REMOVAL AT 95% EFFICIENCY FOR WATER



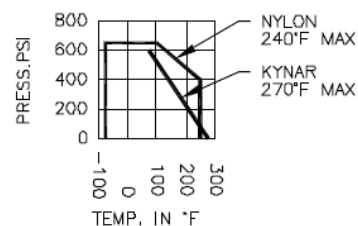
2.2 Performance Chart for Water

FLOW CAPACITY FOR WATER



2.3 Operational Limits

PRESSURE LIMITATION



3 Safety Instructions



Safety Instructions

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used the safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.

4 Additional Tools Needed Not Supplied with Kits

1. Hand cutting tool for piping –

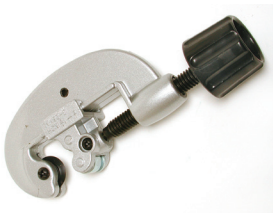
A hand cutting tool is essential for cutting pipe on site at the right length without creating burrs or marks which can effect the tightening.

2. Bending tool for piping –

A pipe bender is needed for bending pipe on site pipe without creating kinks which can cause flow passage restrictions.

3. Pipe thread sealant –

A tube of pipe sealant (Loctite® 577 or equal) is critical for all NPT connections to ensure proper joint tightness and to help avoid leakage.



Hand Cutting Tool



Pipe Bending Tool

5 Material of Construction for End Suction Pump (NL) Kits; PN 2713935

5.1 Use Piping Arrangement #1 for the Following Sizes

- NL2X1.25X6
- NL2X1.25X8
- NL2X1.25X10
- NL2X1.25X12
- NL2.5X1.5X6
- NL2.5X1.5X8
- NL2.5X1.5X10
- NL2.5X1.5X12
- NL2.5X2X6
- NL2.5X2X8
- NL2.5X2X10
- NL2.5X2X12
- NL3X2.5X6
- NL3X2.5X8
- NL3X2.5X10
- NL3X2.5X12
- NL4X3X6
- NL4X3X8
- NL4X3X10
- NL4X3X12
- NL5X4X6
- NL5X4X8
- NL5X4X10
- NL5X4X12

Item	Description	Qty	Material	Part Number
1	Male Connector – Tube OD .25" – .25" NPT	2	316 SS	2713940
2	Tube – OD .25" x 16 SWG x 4.75" long	1	316 SS	2713936*
3	Union Elbow – .25"	6	316 SS	2713942
4	Tube – OD .25" x 16 SWG x 7.13" long	1	316 SS	2713936*
5	Tube – OD .25" x 16 SWG x 15.56" long	1	316 SS	2713936*
6	Female Connector – Tube OD .25" – .50" NPT	1	316 SS	2713939
7	Abrasive Separator – Model 100 – .5" NPT	1	Nylon	2712988
8	Tube – OD .25" x 16 SWG x 5.00" long	1	316 SS	2713936*
9	Tube – OD .25" x 16 SWG x 4.25" long	1	316 SS	2713936*
10	Tube – OD .25" x 16 SWG x 7.25" long	1	316 SS	2713936*
11	Female Elbow – Tube OD .25" x .5" NPT	1	316 SS	2713937
12	Tube – OD .25" x 16 SWG x 14.75" long	1	316 SS	2713936*
13	Tube – OD .25" x 16 SWG x 9.63" long	1	316 SS	2713936*
14	Male Connector – Tube OD .25" – .13" NPT	1	316 SS	2713946
15	Mini Ball Valve: .5" NPT F x .25" NPT F 316 SS	1	316 SS	2713941
16	Male Connector – Tube OD .25" – .5" NPT	1	316 SS	2713943
17	Tube – OD .25" x 16 SWG x 5.13" long	1	316 SS	2713936*
18	Screw: 5/16"–18 UNC x .5 long, 316 SS	1	316 SS	2713986

* Note: Tube (PN 2713936) comes supplied in 15 ft lengths. Only quantity (1) is needed for entire kit and are to be cut to length per description above.

5.2 Use Piping Arrangement #2 for the Following Sizes

- NL4X3X12
- NL5X3X16
- NL5X4X12
- NL5X4X16
- NL6X5X8
- NL6X5X10
- NL6X5X12
- NL6X5X16
- NL8X6X8
- NL8X6X10
- NL8X6X12
- NL8X6X16

Item	Description	Qty	Material	Part Number
1	Male Connector – Tube OD .25" – .25" NPT	2	316 SS	2713940
2	Tube – OD .25" x 16 SWG x 4.75" long	1	316 SS	2713936*
3**	Union Elbow – .25"	5	316 SS	2713942
4	Tube – OD .25" x 16 SWG x 11.63" long	1	316 SS	2713936*
5	Tube – OD .25" x 16 SWG x 18.63" long	1	316 SS	2713936*
6	Female Connector – Tube OD .25" – .50" NPT	1	316 SS	2713939
7	Abrasive Separator – Model 100 – .5" NPT	1	Nylon	2712988
8	Tube – OD .25" x 16 SWG x 8.75" long	1	316 SS	2713936*
9	Tube – OD .25" x 16 SWG x 4.31" long	1	316 SS	2713936*
10	Tube – OD .25" x 16 SWG x 7.25" long	1	316 SS	2713936*
11	Female Elbow – Tube OD .25" x .5" NPT	1	316 SS	2713937
12	Tube – OD .25" x 16 SWG x 18.44" long	1	316 SS	2713936*
13	Tube – OD .25" x 16 SWG x 13.50" long	1	316 SS	2713936*
14	Male Connector – Tube OD .25" – .13" NPT	1	316 SS	2713946
15	Mini Ball Valve: .5" NPT F x .5" NPT F 316 SS	1	316 SS	2713941
16	Male Connector – Tube OD .25" – .5" NPT	1	316 SS	2713943
17	Screw: 5/16"–18 UNC x .5 long, 316 SS	1	316 SS	2713986

* Tube (PN 2713936) comes supplied in 15 ft lengths. Only quantity (1) is needed for entire kit and are to be cut to length per description above.

** For Item 3, only use (5) union elbows although (6) are supplied in the kit

5.3 Use Piping Arrangement #3 for the Following Sizes

- NL2x1.25x5
- NL2.5x1.5x5
- NL2.5X2X5
- NL3X2.5X5

Item	Description	Qty	Material	Part Number
1	Male Connector – Tube OD .25" – .25" NPT	2	316 SS	2713940
2	Tube – OD .25" x 16 SWG x 4.75" long	1	316 SS	2713936*
3**	Union Elbow – .25"	5	316 SS	2713942
4	Tube – OD .25" x 16 SWG x 4.50" long	1	316 SS	2713936*
5	Tube – OD .25" x 16 SWG x 14.00" long	1	316 SS	2713936*
6	Female Connector – Tube OD .25" – .50" NPT	1	316 SS	2713939
7	Abrasive Separator – Model 100 – .5" NPT	1	Nylon	2712988
8	Tube – OD .25" x 16 SWG x 5.00" long	1	316 SS	2713936*
9	Tube – OD .25" x 16 SWG x 4.38" long	1	316 SS	2713936*
10	Tube – OD .25" x 16 SWG x 4.19" long	1	316 SS	2713936*
11	Female Elbow – Tube OD .25" x .5" NPT	1	316 SS	2713937
12***	Tube – OD .25" x 16 SWG x 18.75" long	1	316 SS	2713936*
13	N/A	-	-	-
14	Male Connector – Tube OD .25" – .13" NPT	1	316 SS	2713946
15	Mini Ball Valve: .5" NPT F x .5" NPT F 316 SS	1	316 SS	2713941
16	Male Connector – Tube OD .25" – .5" NPT	1	316 SS	2713943
17	Tube – OD .25" x 16 SWG x 7.56" long	1	316 SS	2713936*
18	Screw: 5/16"–18 UNC x .5 long, 316 SS	1	316 SS	2713986

* Tube (PN 2713936) comes supplied in 15 ft lengths. Only quantity (1) is needed for entire kit and are to be cut to length per description above.

** For Item 3, only use (5) union elbows although (6) are supplied in the kit

*** Item 12 is required to be a single bent piece of tubing.

6 Material of Construction for Split Case Pump (SCP) Kits, PN: 2713934

Item	Description	Qty	Material	Part Number
1	Male Connector – Tube OD .25" – .25" NPT	3	316 SS	2713940
2	Tube – OD .25" x 16 SWG x 12" long	2	316 SS	2713936*
3	Female Connector – Tube OD .25" – .50" NPT	2	316 SS	2713939
4	Abrasive Separator – Model 100 – .5" NPT	2	Nylon	2712988
5	Female Elbow – Tube OD .25" x .5" NPT	2	316 SS	2713937
6	Tube – OD .25" x 16 SWG x 24.5" long	2	316 SS	2713936*
7	Mini Ball Valve: .5" NPT F x .5" NPT F 316 SS	2	316 SS	2713941
8	Tube – OD .25" x 16 SWG x 29" long	2	316 SS	2713936*
9	Tube – OD .25" x 16 SWG x 65.5" long	2	316 SS	2713936*
10	Union Tee – .25"	2	316 SS	2713938
11	Tube – OD .25" x 16 SWG x 31.5" long	2	316 SS	2713936*
12	Male Connector – Tube OD .25" – .5" NPT	2	316 SS	2713943

* Tube (PN 2713936) comes supplied in 15 ft lengths. Only quantity (2) are needed for entire kit and are to be cut to length per description above.

7 Machined Casing Back Cover PN's for NL Pumps

Casing back covers used on NL pumps with abrasive separator kits require special machining. Therefore, a standard/stock casing back cover used on standard/stock NL pumps will not work with the abrasive separator kit.

If an abrasive separator kit is necessary, make sure to order the correct casing back cover from the pn's listed, along with the NL Separator kit, PN: 2713935, and that the casing back cover plate has (2) drilled and taped holes as shown in figure 1. Otherwise, contact Wilo Customer Service.

Pump Model	Description	Material	Part Number
NL2x1-1/4x5	BACK COVER NL SG25 D125 MS FG260-FP	Cast Iron	8018408
NL2x1-1/4x6A	BACK COVER NL SG25 D160 032 MS FG260-FP	Cast Iron	8018409
NL2x1-1/4x6B	BACK COVER NL SG25 D160 032 MS FG260-FP	Cast Iron	8018409
NL2x1-1/4x8A	BACK COVER NL SG25 D200 032 MS FG260-FP	Cast Iron	8018410
NL2x1-1/4x8B	BACK COVER NL SG25 D200 032 MS FG260-FP	Cast Iron	8018410
NL2x1-1/4x10	BACK COVER NL SG25 D250 MS FG260-FP	Cast Iron	8018411
NL2-1/2x1-1/2x5	BACK COVER NL SG25 D125 MS FG260-FP	Cast Iron	8018408
NL2-1/2x1-1/2x6	BACK COVER NL SG25 D160 032 MS FG260-FP	Cast Iron	8019188
NL2-1/2x1-1/2x8	BACK COVER NL SG25 D200 032 MS FG260-FP	Cast Iron	8018410
NL2-1/2x1-1/2x10	BACK COVER NL SG25 D250 MS FG260-FP	Cast Iron	8018411
NL2-1/2x1-1/2x12	BACK COVER NL SG35 D315 040 MS FG260-FP	Cast Iron	8018416
NL2-1/2x2x5	BACK COVER NL SG25 D125 MS FG260-FP	Cast Iron	8018408
NL2-1/2x2x6	BACK COVER NL SG25 D160 050 MS FG260-FP	Cast Iron	8019188
NL2-1/2x2x8	BACK COVER NL SG25 D200 050 MS FG260-FP	Cast Iron	8019189
NL2-1/2x2x10	BACK COVER NL SG25 D250 MS FG260-FP	Cast Iron	8018411
NL2-1/2x2x12	BACK COVER NL SG35 D315 MS FG260-FP	Cast Iron	8019190
NL3x2-1/2x5	BACK COVER NL SG25 D125 MS FG260-FP	Cast Iron	8018408
NL3x2-1/2x6	BACK COVER NL SG25 D160 050 MS FG260-FP	Cast Iron	8019188
NL3x2-1/2x8	BACK COVER NL SG25 D200 050 MS FG260-FP	Cast Iron	8019189
NL3x2-1/2x10	BACK COVER NL SG35 D250 065 MS FG260-FP	Cast Iron	8019192
NL3x2-1/2x12	BACK COVER NL SG35 D315 MS FG260-FP	Cast Iron	8019190
NL4x3x6	BACK COVER NL SG25 D160 050 MS FG260-FP	Cast Iron	8018412
NL4x3x8	BACK COVER NL SG35 D200 080 MS FG260-FP	Cast Iron	8018413
NL4x3x10	BACK COVER NL SG35 D250 080 MS FG260-FP	Cast Iron	8019193
NL4x3x12	BACK COVER NL SG35 D315 MS FG260-FP	Cast Iron	8019190
NL5x3x16	BACK COVER NL SG45 D400 080 MS FG260-FP	Cast Iron	8018418
NL5x4x6	BACK COVER NL SG35 D160 100 MS FG260-FP	Cast Iron	8018412
NL5x4x8	BACK COVER NL SG35 D200 100 MS FG260-FP	Cast Iron	8019191
NL5x4x10	BACK COVER NL SG35 D250 100 MS FG260-FP	Cast Iron	8019194
NL5x4x12	BACK COVER NL SG35 D315 MS FG260-FP	Cast Iron	8019190
NL5x4x16	BACK COVER NL SG45 D400 080 MS FG260-FP	Cast Iron	8048477
NL6x5x8	BACK COVER NL SG35 D200 125 MS FG260-FP	Cast Iron	8018418
NL6x5x10	BACK COVER NL SG35 D250 125 MS FG260-FP	Cast Iron	8019195
NL6x5x12	BACK COVER NL SG45 D315 MS FG260-FP	Cast Iron	8018417
NL6x5x16	BACK COVER NL SG45 D400 080 MS FG260-FP	Cast Iron	8018419
NL8x6x8	BACK COVER NL SG35 D200 125 MS FG260-FP	Cast Iron	8018414
NL8x6x10	BACK COVER NL SG35 D250 150 MS FG260-FP	Cast Iron	8018415
NL8x6x12	BACK COVER NL SG45 D315 MS FG260-FP	Cast Iron	8018417
NL8x6x16	BACK COVER NL SG45 D400 080 MS FG260-FP	Cast Iron	8018419

See figure 1 for example of a casing back cover machined to work with the abrasive separator kit.

8 Installation Instructions for NL and SCP Units

1. Layout piping assembly (elbows, connectors, valve, etc.) before cutting any tubing.

2. Measure spans between components and cut tubing to necessary lengths using hand cutting pipe cutter.

NOTE: Maximum lengths are given in the previous sections [5.1, 5.2, 5.3 and 6] which may be different depending on pump model and size. See the following pages for accurate tubing lengths.

3. Apply thread sealant to all NPT connections

4. Assemble piping components as shown, bending tubing when necessary using a pipe bending tool.



CAUTION: Potential Abrasive Separator Damage

Improper separator orientation can cause damage to the Abrasive Separator or improper system operation. Failure to follow this instruction can result in property damage and/or moderate personal injury.

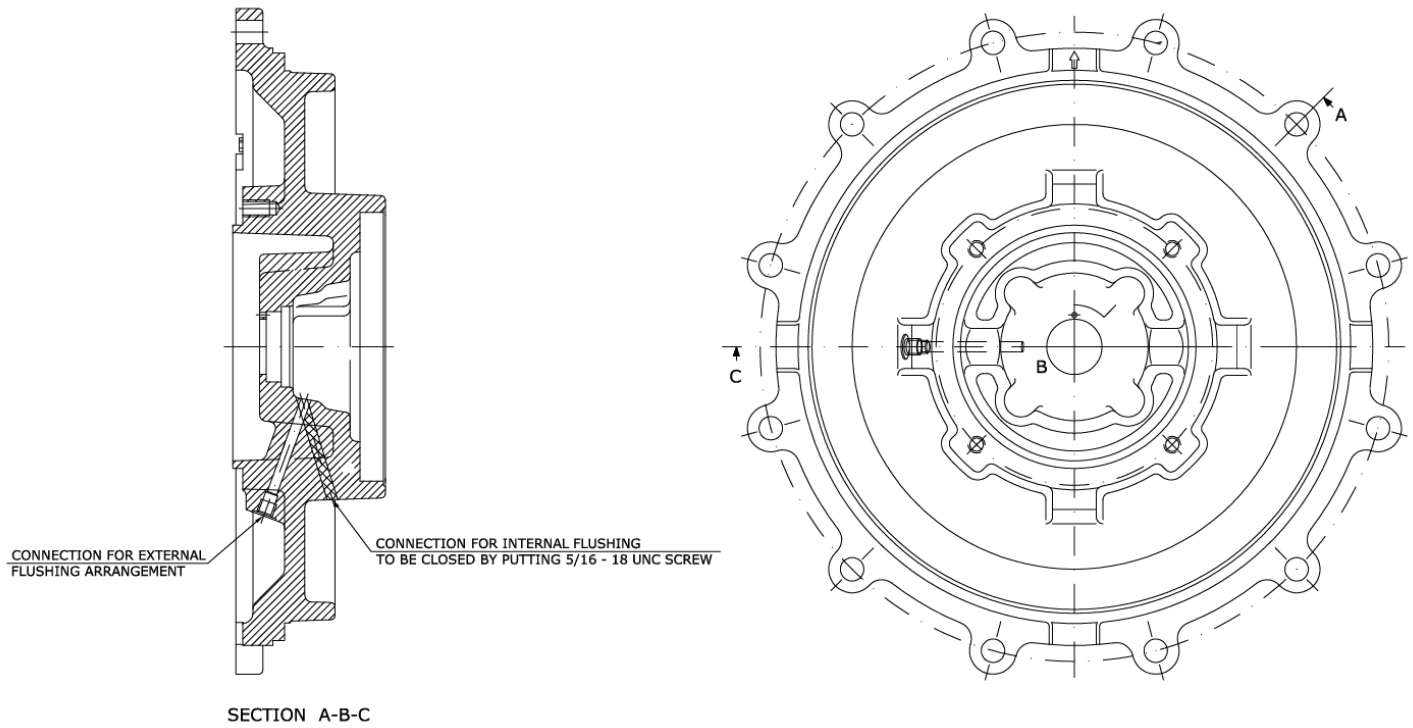
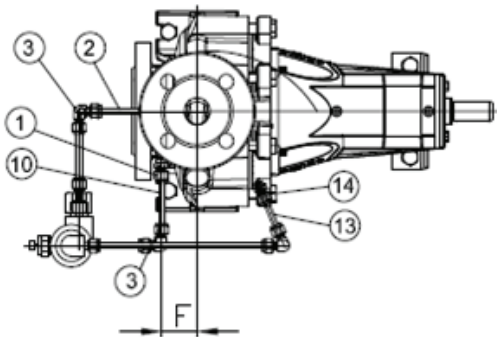
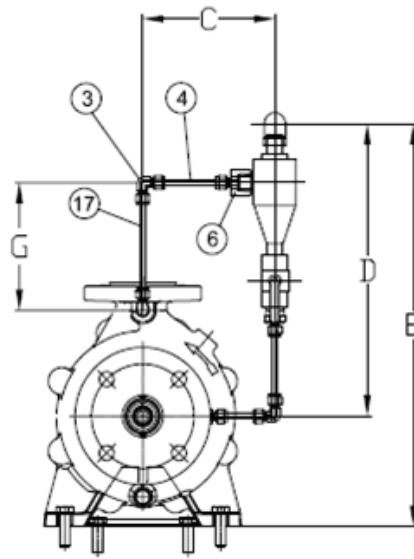
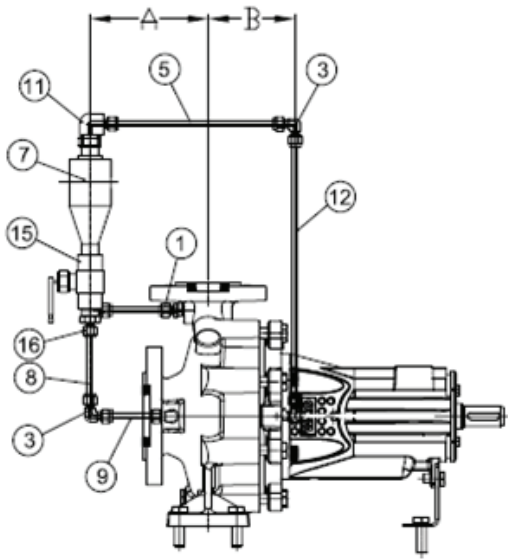


Figure 1: Casing back cover with special machining

**8.1 Piping Layout with Abrasive Separator for NL Units:
Arrangement #1**

NOTE: For dimensions A thru F, see chart for general overall lengths

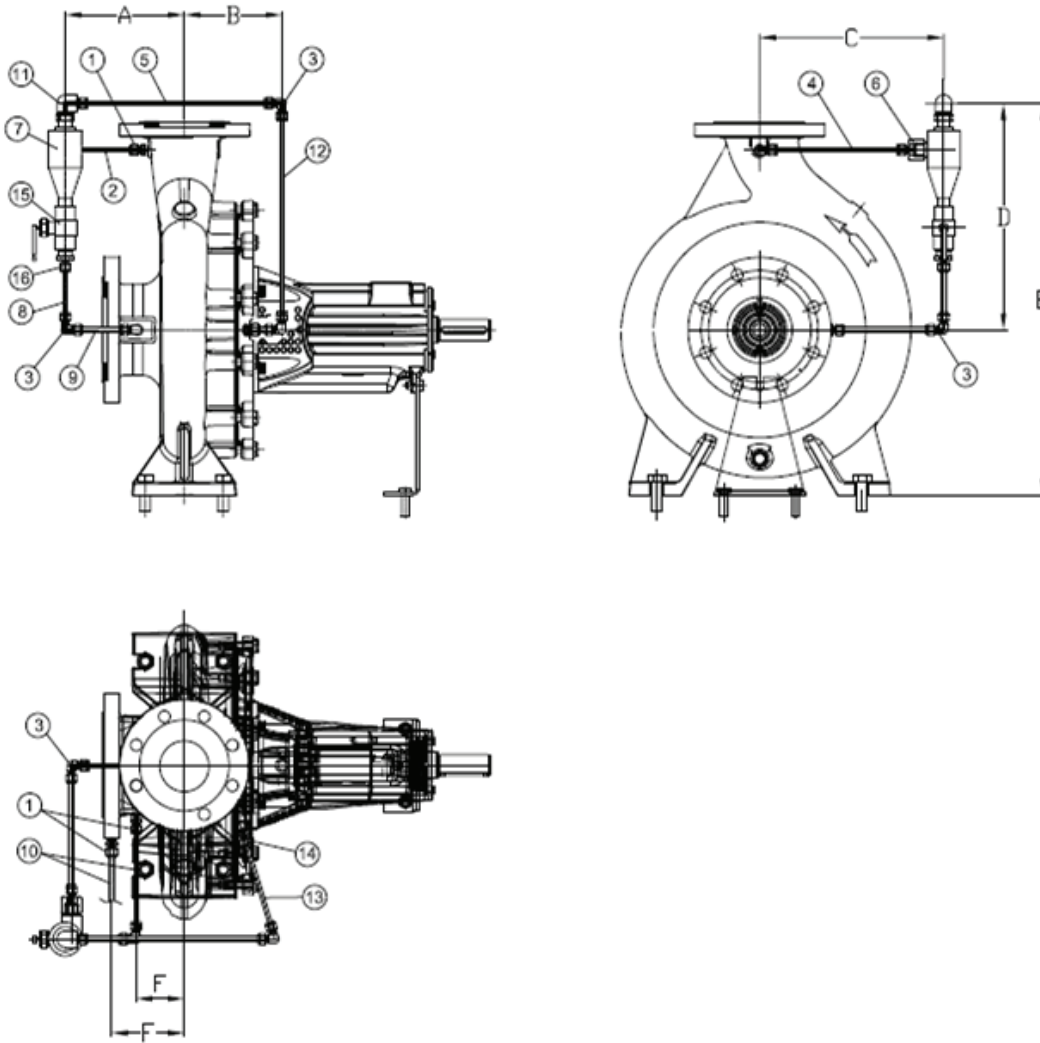


NL NAMEX	OVERALL GENERAL - DIMENSIONS						
	A	B	C	D	E	F	G
	(inch)						
NL2x1-1/4x6	6	6 2/3	5 1/3	14 3/4	20	1 3/4	6 4/5
NL2x1-1/4x6B	6	6 2/3	5 2/3	14 3/4	20	1 3/4	6 4/5
NL2x1-1/4x8	5 4/5	6 2/3	6	14 3/4	21	1 4/5	6
NL2x1-1/4x8B	5 4/5	6 2/3	6 1/3	14 3/4	21	1 4/5	6
NL2x1-1/4x10	6	6 2/3	7	14 3/4	21 6/7	2 1/3	4 3/8
NL2-1/2x1-1/2x6	6	7	6	14 3/4	20	1 6/7	6 6/7
NL2-1/2x1-1/2x8	6	7	6 1/2	14 3/4	21	2 1/2	6
NL2-1/2x1-1/2x10	6	7	7 2/7	14 3/4	21 6/7	2 1/6	4 1/5
NL2-1/2x1-1/2x12	6 1/9	7	9	14 3/4	23 5/8	3	3 1/5
NL2-1/2x2x6	6 2/5	7 1/5	6 3/7	14 3/4	21	2 2/3	6 1/5
NL2-1/2x2x8	6 2/9	7 1/5	6 6/7	14 3/4	21	2 4/7	5 2/5
NL2-1/2x2x10	6 1/5	7 1/5	7 3/5	14 3/4	21 6/7	2 1/5	4 1/3
NL2-1/2x2x12	6 2/5	7 1/5	9 1/5	14 3/4	23 5/8	3 1/3	2 1/6
NL3x2-1/2x6	6 1/2	7 4/7	6 4/5	14 3/4	21	2 1/2	5 1/3
NL3x2-1/2x8	6 1/2	7 4/7	7 1/2	14 3/4	21 6/7	2 1/3	4 1/3
NL3x2-1/2x10	6 1/2	7 4/7	8 1/6	14 3/4	22 2/3	2 1/2	3 2/9
NL3x2-1/2x12	6 1/2	7 4/7	9 3/5	14 3/4	23 5/8	3 1/4	2 1/6
NL4x3x6	6 8/9	7 7/8	7 1/2	14 3/4	21 6/7	3	5 1/8
NL4x3x8	6 8/9	7 7/8	8	14 3/4	21 6/7	2 7/8	3 5/8
NL4x3x10	6 8/9	7 7/8	8 4/5	14 3/4	22 2/3	2 4/5	2 1/3
NL5x4x6	7 1/2	8 1/4	9	14 3/4	22 2/3	3 1/3	2 1/3
NL5x4x8	7 2/7	8 1/4	9	14 3/4	22 2/3	2 7/8	2 1/3
NL5x4x10	7 2/7	8 1/4	9 2/7	14 3/4	23 5/8	3 1/2	2 1/3

NL NAMEX	APPROXIMATE TUBE LENGTHS FOR ITEM #'s								
	2	4	5	8	9	10	12	13	17
	(inch)								
NL2x1-1/4x6	4 5/7	3 3/8	12 3/5	5	4 1/6	3 1/6	14 3/4	5 1/3	6 4/5
NL2x1-1/4x6B	4 5/7	3 5/7	12 3/5	5	4 1/7	3 1/2	14 3/4	5 2/3	6 4/5
NL2x1-1/4x8	4 5/7	4	12 1/2	5	4	3 7/8	14 3/4	6	6
NL2x1-1/4x8B	4 5/7	4 1/3	12 1/2	5	4	4 1/7	14 3/4	6 1/3	6
NL2x1-1/4x10	4 5/7	5 1/8	12 3/5	5	3 1/2	5 2/5	14 3/4	7	4 3/8
NL2-1/2x1-1/2x6	4 5/7	4	12 8/9	5	4	3 5/7	14 3/4	6	6 6/7
NL2-1/2x1-1/2x8	4 5/7	4 5/9	12 8/9	5	3 4/9	4 1/3	14 3/4	6 1/2	6
NL2-1/2x1-1/2x10	4 5/7	5 1/3	12 8/9	5	3 3/4	5 1/3	14 3/4	7 2/7	4 1/5
NL2-1/2x1-1/2x12	4 5/7	7	13	5	3	7	14 3/4	9	3 1/5
NL2-1/2x2x6	4 5/7	4 4/9	13 4/7	5	3 5/7	4	14 3/4	6 3/7	6 1/5
NL2-1/2x2x8	4 5/7	4 7/8	13 2/5	5	3 2/3	4 1/2	14 3/4	6 6/7	5 2/5
NL2-1/2x2x10	4 5/7	5 5/8	13 2/5	5	4	5 5/8	14 3/4	7 3/5	4 1/3
NL2-1/2x2x12	4 5/7	7 2/9	13 4/7	5	3	7	14 3/4	9 1/5	2 1/6
NL3x2-1/2x6	4 5/7	4 5/6	14	5	4	4 1/3	14 3/4	6 4/5	5 1/3
NL3x2-1/2x8	4 5/7	5 1/2	14	5	4 1/7	5	14 3/4	7 1/2	4 1/3
NL3x2-1/2x10	4 5/7	6 1/5	14	5	4	5 5/7	14 3/4	8 1/6	3 2/9
NL3x2-1/2x12	4 5/7	7 2/3	14	5	3 1/4	7 1/4	14 3/4	9 3/5	2 1/6
NL4x3x6	4 5/7	5 1/2	14 3/4	5	4	4 5/7	14 3/4	7 1/2	5 1/8
NL4x3x8	4 5/7	6 1/8	14 3/4	5	4	5 1/7	14 3/4	8	3 5/8
NL4x3x10	4 5/7	6 5/6	14 3/4	5	4	5 2/3	14 3/4	8 4/5	2 1/3
NL5x4x6	4 5/7	7	15 3/4	5	4 1/7	5 1/5	14 3/4	9	2 1/3
NL5x4x8	4 5/7	7	15 5/9	5	4 2/5	5 2/3	14 3/4	9	2 1/3
NL5x4x10	4 5/7	7 1/3	15 5/9	5	3 3/4	6	14 3/4	9 2/7	2 1/3

8.2 Piping Layout with Abrasive Separator for NL Units:
Arrangement #2

NOTE: For dimensions A thru F, see chart for general overall lengths

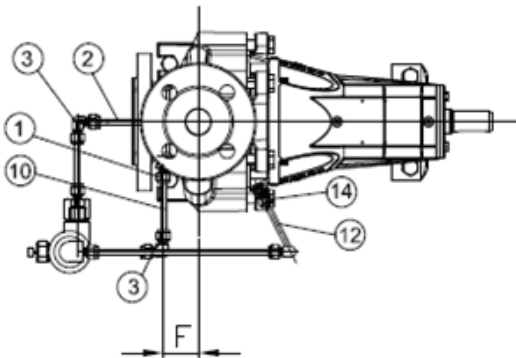
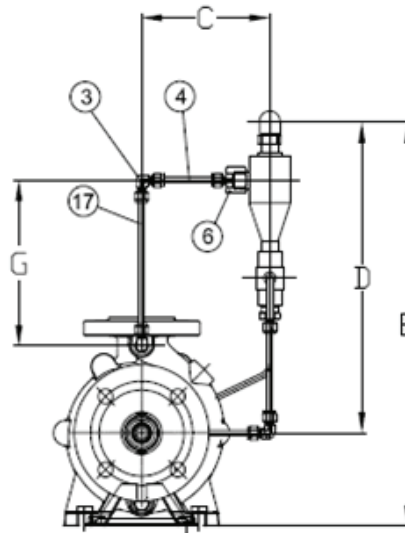
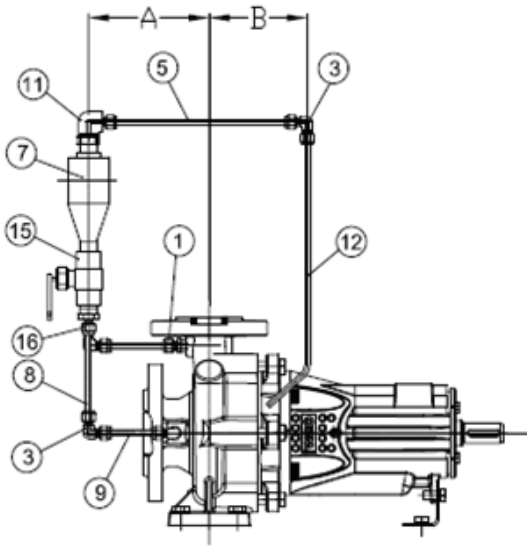


NL-NAMEX	OVERALL GENERAL - DIMENSIONS						
	A	B	C	D	E	F	G
	(inch)						
NL4x3x12	6 8/9	7 7/8	10 1/8	13 7/9	23 5/8	3	-
NL5x3x16	7 1/2	7 7/8	11 3/8	15	26	4 1/7	-
NL5x4x12	7 1/4	8 1/4	10 3/5	13 7/9	23 5/8	3 1/2	-
NL5x4x16	7 2/3	8 1/4	12 1/5	14 7/8	26	4 7/8	-
NL6x5x8	8	8 6/7	10 2/5	13 4/7	23 3/7	4	-
NL6x5x10	7 7/8	8 6/7	10 1/4	15 1/6	25	3 1/2	-
NL6x5x12	8 1/4	8 6/7	11 1/3	14 4/5	25 5/6	4 7/8	-
NL6x5x16	8 1/4	8 6/7	12 1/2	16 4/7	29	4 5/7	-
NL8x6x8	8 1/2	9 5/9	10 8/9	16 4/5	27 5/6	4 3/5	-
NL8x6x10	8 1/2	9 5/9	11 5/7	17	28	4 1/2	-
NL8x6x12	8 6/7	9 5/9	12 1/5	16 3/7	27 4/9	5 2/3	-
NL8x6x16	9	9 5/9	13 1/2	18 2/5	30 4/5	5 2/3	-

NL-NAMEX	APPROXIMATE TUBE LENGTHS FOR ITEM #s								
	2	4	5	8	9	10	12	13	17
	(inch)								
NL4x3x12	4 5/7	8 1/7	14 3/4	4	4	7 1/6	13 7/9	10 1/8	-
NL5x3x16	4 5/7	9 2/5	15 1/3	5 1/4	3 1/3	6	15	11 3/8	-
NL5x4x12	4 5/7	8 5/8	15 1/2	4	3 5/7	7 1/4	13 7/9	10 3/5	-
NL5x4x16	4 5/7	10 1/4	16	5 1/6	2 4/5	7	14 7/8	12 1/5	-
NL6x5x8	4 5/7	8 3/7	17	3 6/7	4 1/7	6 1/6	13 4/7	10 2/5	-
NL6x5x10	4 5/7	8 1/4	16 3/4	5 3/7	4 1/3	6 2/7	15 1/6	10 1/4	-
NL6x5x12	4 5/7	9 3/8	17 1/8	5	3 2/5	5 5/9	14 4/5	11 1/3	-
NL6x5x16	4 5/7	10 5/9	17 1/8	6 6/7	3 1/2	6 1/2	16 4/7	12 1/2	-
NL8x6x8	4 5/7	9	18	7	3 6/7	6 1/3	16 4/5	10 8/9	-
NL8x6x10	4 5/7	9 3/4	18	7 1/5	4	7 1/5	17	11 5/7	-
NL8x6x12	4 5/7	10 2/9	18 2/5	6 2/3	3 1/5	5 2/7	16 3/7	12 1/5	-
NL8x6x16	4 5/7	11 4/7	18 3/5	8 2/3	3 2/5	6 2/3	18 2/5	13 1/2	-

8.3 Piping Layout with Abrasive Separator for NL Units:
Arrangement #3

NOTE: For dimensions A thru F, see chart for general overall lengths

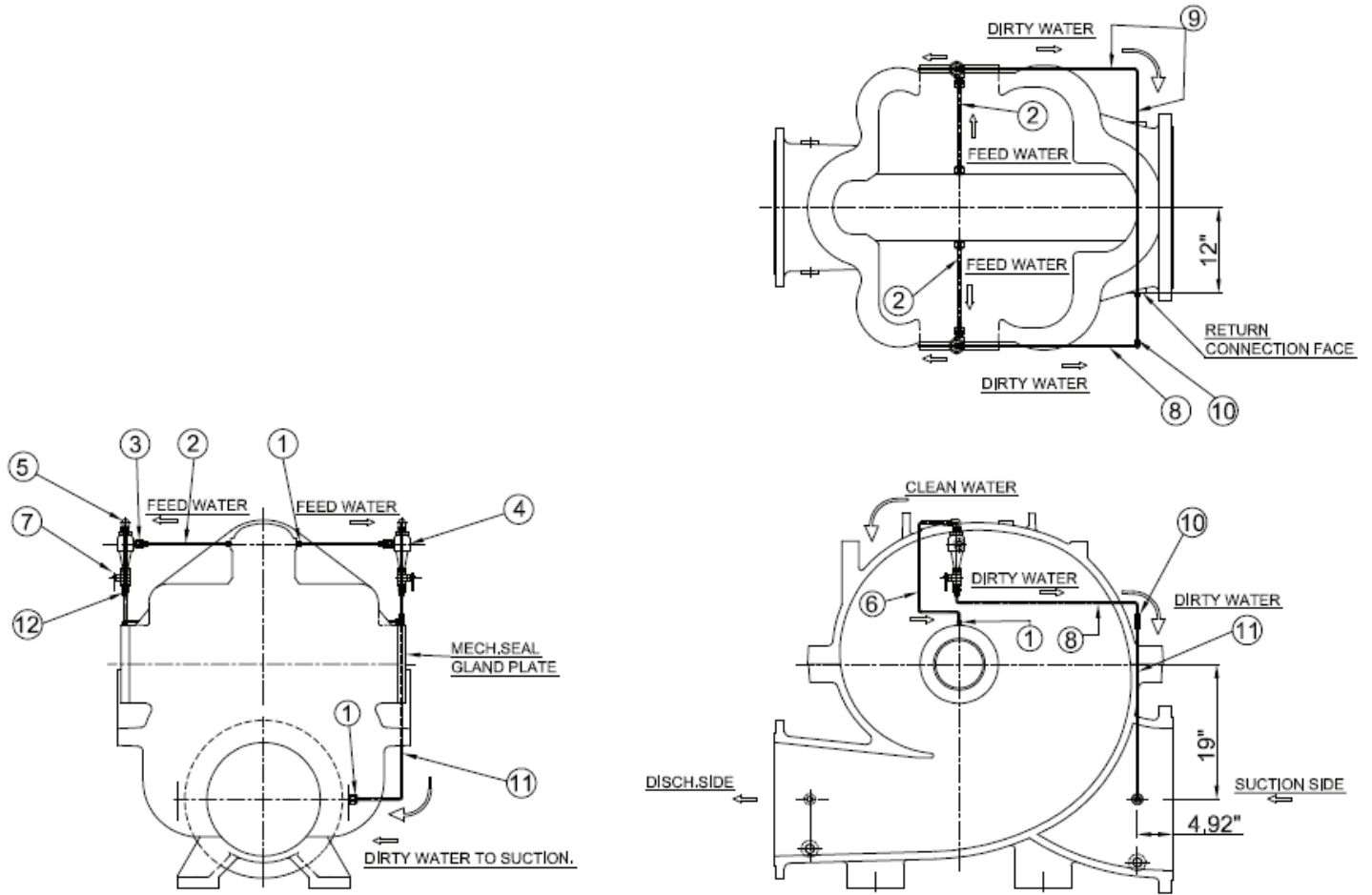


NL-NAMEX	OVERALL GENERAL - DIMENSIONS						
	A	B	C	D	E	F	G
	(inch)						
NL2x1-1/4x5	5 4/5	6 2/3	5 1/6	14 3/4	19 1/6	1 2/3	7 5/9
NL2-1/2x1-1/2x5	6	7	5 1/4	14 3/4	19 1/6	1 4/7	7 5/9
NL2-1/2x2x5	6 2/9	7 1/5	5 2/3	14 3/4	20	2 2/5	6 6/7
NL3x2-1/2x5	6 1/2	7 4/7	6 1/2	14 3/4	21	2 4/9	6 1/9

NL-NAMEX	APPROXIMATE TUBE LENGTHS FOR ITEM #s								
	2	4	5	8	9	10	12	13	17
	(inch)								
NL2x1-1/4x5	4 5/7	3 1/5	12 1/2	5	4 1/7	3 2/5	18 5/7	-	7 5/9
NL2-1/2x1-1/2x5	4 5/7	3 2/7	12 8/9	5	4 1/3	3 2/7	18 5/7	-	7 5/9
NL2-1/2x2x5	4 5/7	3 5/7	13 2/5	5	3 5/6	3 5/7	18 5/7	-	6 6/7
NL3x2-1/2x5	4 5/7	4 1/2	14	5	4	4 1/7	18 5/7	-	6 1/9

8.4 Piping Layout with Abrasive Separator for SCP Units

NOTE: All Dimensions are in inches.
 Elbows (not supplied with kit) have been avoided in the piping, how ever can be used if necessary.



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