



Fiber Optic Cable Blower



CABLE BLOWING



Patent #6,012,621



Fiber Optic Cable Blower

As a leader in the manufacture of cable installation tools and equipment, Condux offers a superior Fiber Optic Cable Blower that is easy to use and safe to operate.

The Condux Fiber Optic Cable Blower offers more speed and more push force monitoring. This results in faster installations.

Install up to 300 feet of fiber optic cable per minute (90 m/min). The cable travels at the same speed as the air! A carrier is always attached to the front of the cable. Compressed air propels the carrier and cable through the air-tight sealed duct. And, because air flow and tractor drive speed can be adjusted, you can install fiber at the rate which best suits any application.

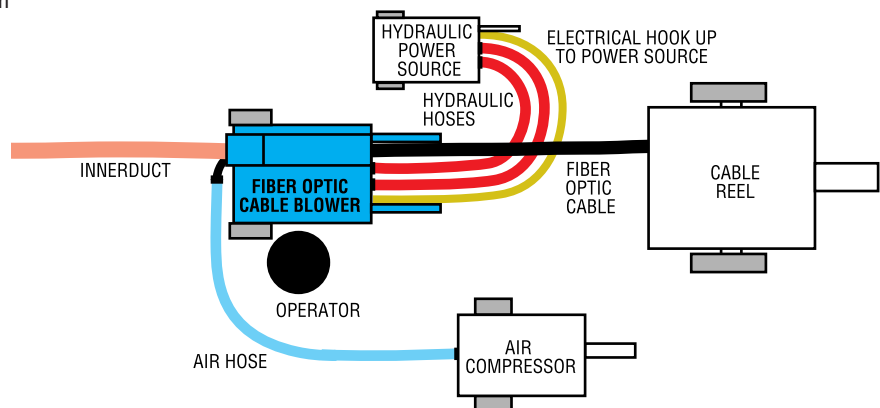
The Condux Fiber Optic Cable Blower features longer tractor feed grip area for less stress on the cable, and a hydraulic cylinder on the tractor feed to better control down pressure.

A speed and distance counter with LCD read-out, as well as convenient hydraulic and pneumatic controls, come standard with the Condux Fiber Optic Cable Blower. Blowers equipped with the Advanced Electronic Control System will shut down if slippage, over-speed or cable stoppage is detected. Compare features and quality to see why the Condux Fiber Optic Cable Blower is better.

Specifications		
Hydraulic System Requirements	Hydraulic Operating Pressure	1,500 psi (103 bar) maximum
	Hydraulic Flow	8 gpm (30 lpm) maximum 5 gpm (19 lpm) minimum
	Hydraulic Circuit Type	Open Center
Air Compressor Requirements	Pneumatic Pressure	150 psi (10.3 bar) maximum 100 psi (6.9 bar) minimum
	Required Flow Capacity	375 SCFM (11 m ³ /min) recommended
Operational Capacities	Pushing Force	150 lbs (667 N) maximum
	Pushing Speed	300 ft/min (90 m/min) maximum
	Cable Sizes	3/8" to 1-1/4" (10 mm to 32 mm)
	Standard Duct Sizes	1", 1-1/4" TRUE, 1-1/4", 1-1/2", 2"; SDR 11 and 13.5 ; 32 mm, 36 mm, 37 mm, 40 mm, 42 mm, 50 mm, 60 mm, 63 mm
Distance and Speed Displays (Blower Packages 1, 2, 3, 4)	Typical Installation Distances	4,000–10,000 ft. (1.2–3.0 km)*
	External Power Requirements	No external power required
	Display Unit	Digital LCD Display
Electronic Control System (Blower Packages 5, 6, 7, 8)	External Power Requirements	12 volts DC
	Automatic Shutdowns	At programmed minimum and maximum speed When cable slippage or stoppage is detected
	Display Unit	Digital LCD Display



*Depends on duct geometry, air leakage of duct system and couplings, and size of duct and cable.



Fiber Optic Cable Blower



Customer Service, Reliability & Support

The Condux Fiber Optic Cable Blower is precision manufactured in the USA by Condux International, Inc. Over 20 years of

technical experience and superior customer service is behind every product sold.

Speed & Distance Readout

All models come standard with speed and distance display.



Advanced Electronic Controls



Optional system monitors and displays the cable and tractor drive speeds. Will automatically shut off the blower in these conditions:

- Slippage
- Over-speed
- Cable stoppage

Dual Power System

Designed to operate with two power supplies that work in tandem in order to produce the most steady, efficient and reliable power to blow cable. A hydraulically-powered tractor drive supplements the pressurized air force, thus decreasing the cfm requirements of the air compressor. This means greater cable blowing efficiency using a much smaller air compressor.



Cable & Duct Packs

Components provide for the maximum amount of combinations of duct and cable at the lowest possible price. See ordering information page 113 for complete listings.



Easy to Use

Convenient hydraulic and pneumatic controls for ease of operation. Ergonomically designed. No special maintenance required.

Transportability



New collapsible legs lower the cable blower's center of gravity to ease loading and unloading.





Fiber Optic Cable Blower



CABLE BLOWING

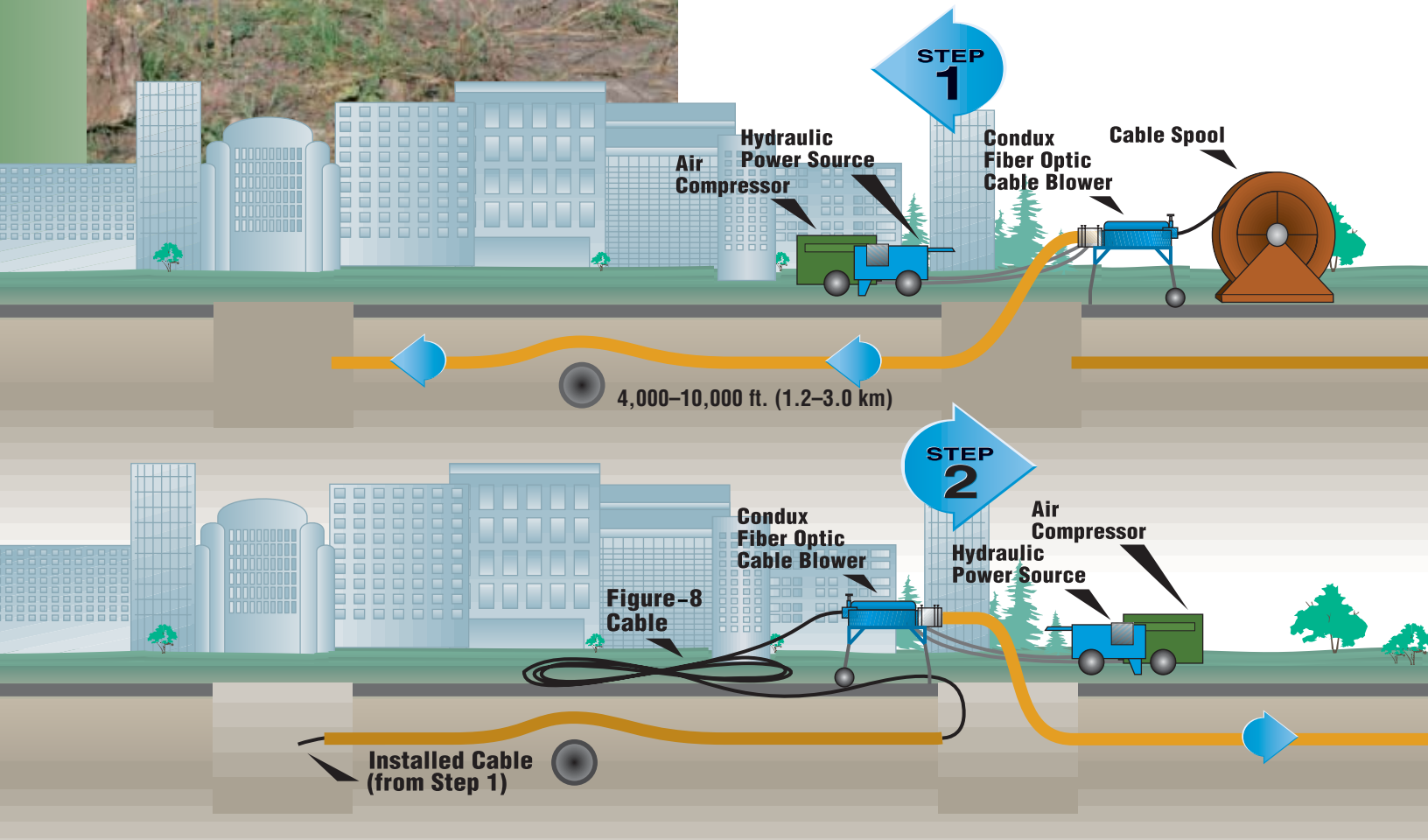


An Efficient Method

Fiber optic cable blowing is one of the most efficient and safe means of installing fiber optic cable. A pressurized blowing system uses two forces to install fiber optic cable. A pulling force combines with a pushing force to cause the cable to travel through the duct like air. Today's fiber optic cable installations benefit from the pressurized blowing system because it provides greater installation speeds with less stress than traditional cable pulling.

The cable blower unit utilizes a hydraulic power system and an air compressor to generate the desired push and pull forces. Working together, this dual power supply provides greater blowing power with lower air consumption. Controls and gauges on the cable blower allow the operator to monitor the forces being exerted on the cable. The operator can make adjustments to make sure the forces being exerted on the cable are working *with* one another, not *against* one another.

Blowing minimizes the stress placed on cable during installation. Because the cable blower provides both pulling and pushing force, stress is balanced. For example, at 135 psi (9.3 bar) in 2 inch (51 mm) duct only 430 lbs (1,913 N) of pulling force is generated.



Fiber Optic Cable Blower



CABLE BLOWING

Blowing vs. Pulling

Blowing cable is different from pulling cable in several ways. During cable pulling, the cable is kept taut and only pull force is applied. It travels in a straight line until a bend or curve changes its path. The cable ultimately rubs on each of the bends or curves, creating friction. As more pulling force is added to counteract the friction, additional stress is added to the cable.

Compared to a pulling application, blowing cable is faster and puts the cable under less stress.

Through cable blowing, contractors are able to install more cable per day with less manpower. This means increased productivity and decreased cost.

How To: The Typical Process

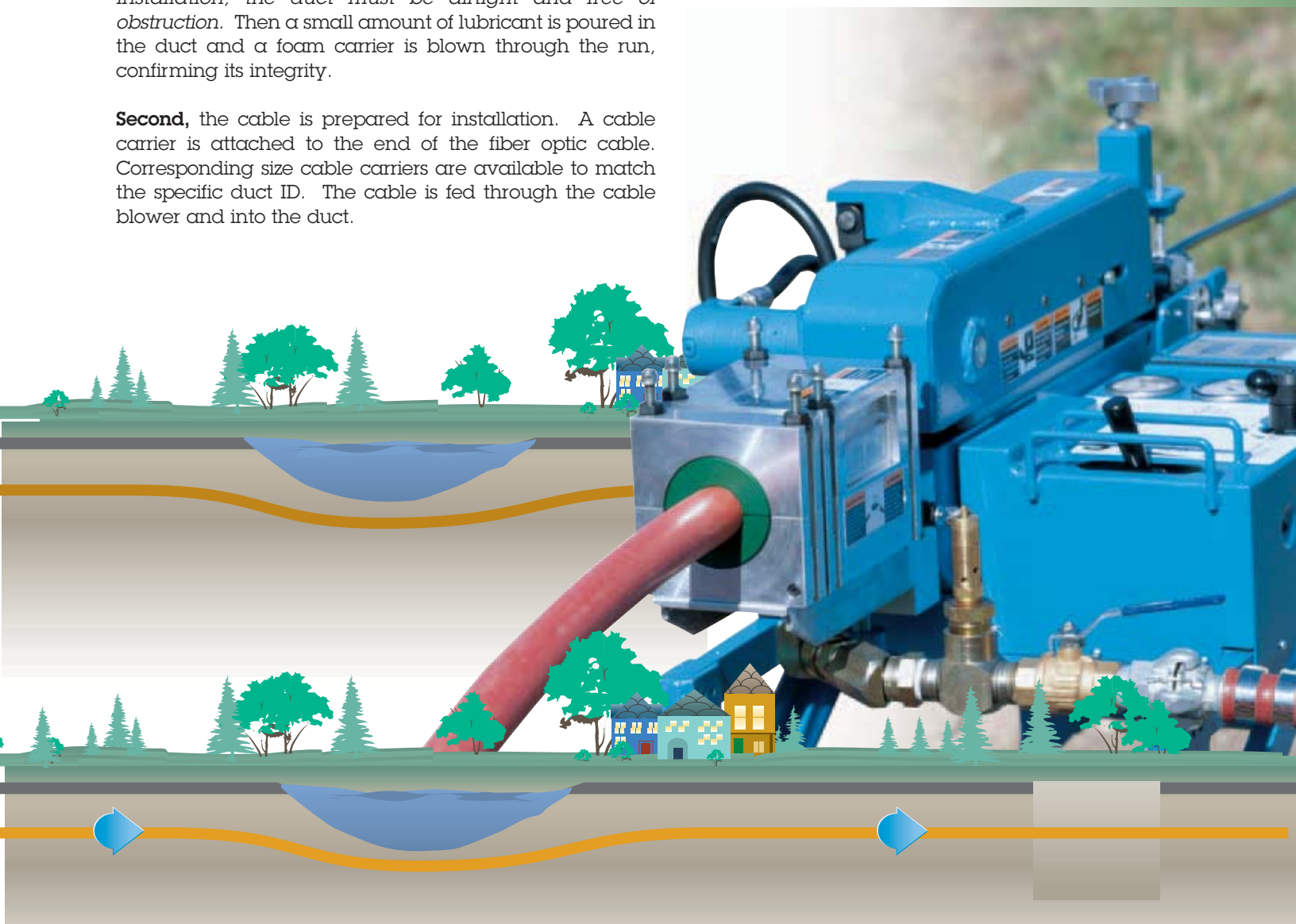
The typical cable blowing process consists of several steps. **First**, the duct integrity is checked. It is pressurized to check for leaks. *In order to ensure a successful installation, the duct must be airtight and free of obstruction.* Then a small amount of lubricant is poured in the duct and a foam carrier is blown through the run, confirming its integrity.

Second, the cable is prepared for installation. A cable carrier is attached to the end of the fiber optic cable. Corresponding size cable carriers are available to match the specific duct ID. The cable is fed through the cable blower and into the duct.

Third, the duct is lubricated. Lubricant is added in front of the cable carrier and behind the cable carrier.

Fourth, the blowing process begins. Pressure (compressed air) is applied to the duct behind the cable carrier. As the pressure tries to equalize, it seeks out the path of least resistance and creates a pushing force on the cable carrier, causing forward motion. The moving cable carrier, in turn, exerts a pulling force on the cable and begins to move it through the duct.

Meanwhile, an additional pushing force is applied to the cable by a hydraulic powered tractor drive on the cable blower. Use of a hydraulic tractor drive reduces air consumption requirements from the air compressor. Plus, the push force from the tractor drive provides cable slack, reduces back tension and keeps the cable loose and flexible. Friction and resistance are then reduced and the cable can travel freely through the duct work.



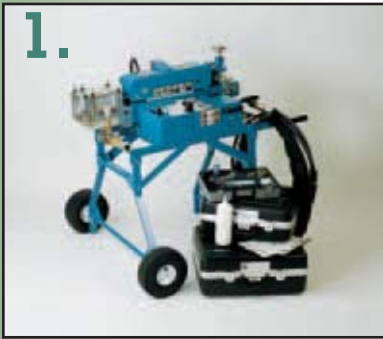


Fiber Optic Cable Blower Packages

CABLE BLOWING

Without Electronics

With Electronics



- Package 1*—08761310**
- Fiber Optic Cable Blower
 - Blower Leg Kit
 - Common Parts Pack

*Requires a minimum of one Cable Pack and one Duct Pack (see page 111).



- Package 5*—08761330**
- Fiber Optic Cable Blower
 - Electronic Controls
 - Blower Leg Kit
 - Common Parts Pack

*Requires a minimum of one Cable Pack and one Duct Pack (see page 111).



- Package 3—08761320**
- Fiber Optic Cable Blower
 - Blower Leg Kit
 - Common Parts Pack
 - Cable Pack 1-3
 - Duct Pack 1-3



- Package 7—08761340**
- Fiber Optic Cable Blower
 - Electronic Controls
 - Blower Leg Kit
 - Common Parts Pack
 - Cable Pack 1-3
 - Duct Pack 1-3

- 3A. Package 3A—08761322**
- Fiber Optic Cable Blower
 - Blower Leg Kit
 - Common Parts Pack

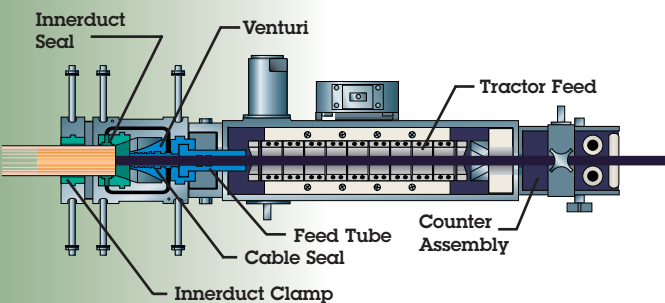
- Cable Pack 1-3
- Duct Pack 2-4

- 7A. Package 7A—08761342**
- Fiber Optic Cable Blower
 - Electronic Controls
 - Blower Leg Kit

- Common Parts Pack
- Cable Pack 1-3
- Duct Pack 2-4

Common Parts Package (comes in all blower packages) includes:

- Allen Wrench (3/32")
- Ratchet Wrench (3/8")
- Socket (1 1/16"-3/8" drive)
- Venturi Air Plug
- 5/8" x 600 lb Swivel (16 mm x 2,669 N)
- Large Case w/Foam Insert
- Small Case w/Foam Insert
- Small Divided Case w/Parts Label
- Parts and User Manual
- Quick Reference Set-up Guide
- Hydraulic Hoses
- 1 qt. Blowing Lubricant
- Capscrew Set (14-#8-32's)
- O-Ring Seal Kit
- Canvas Bag
- User's Video



The Condux Fiber Optic Cable Blower operates efficiently with most common combinations of cable and innerduct sizes.

The correct size cable seals, feed tube and venturi must be determined for the cable being installed. Also necessary are the correct size innerduct seals, clamps and carrier for the innerduct being occupied.

Use the charts on the next page to determine the correct size components for your specific cable and innerduct installation project. Use both the size and color reference to ensure the correct selection each time the Cable Blower is used.



Cover now available with UV blocking material for the Fiber Optic Cable Blower.

Fiber Optic Cable Blower Cover

Part Number	Description
08761341	Cable Blower Cover

Fiber Optic Cable Blower



Cable Packs

CABLE PACK		VENTURI		FEED TUBE		CABLE SEAL		CABLE GRIP	
Cable OD	Part No.	Cable OD	Part No.	Cable OD	Part No.	Cable OD	Part No.	Cable OD	Part No.
0.35-0.60 (8.9-15.2)	08761350 Cable Pack #1	0.35-0.48 (8.9-12.2)	08761400 BLUE	0.35-0.48 (8.9-12.2)	08761401 BLUE	0.35-0.42 (8.9-10.7)	08761424	0.32-0.48 (8.1-12.2)	08643755 033-29-1195
						0.43-0.48 (10.8-12.2)	08761425		
		0.49-0.60 (12.3-15.2)	08761402 GREEN	0.49-0.60 (12.3-15.2)	08761403 GREEN	0.49-0.55 (12.3-14.0)	08761426	0.42-0.61 (10.7-15.5)	08643756 033-29-1196
						0.56-0.60 (14.1-15.2)	08761427		
0.61-0.85 (15.3-21.6)	08761355 Cable Pack #2	0.61-0.73 (15.3-18.5)	08761404 RED	0.61-0.73 (15.3-18.5)	08761405 RED	0.61-0.67 (15.3-17.0)	08761428	0.53-0.74 (13.5-18.8)	08643757 033-29-1197
						0.68-0.73 (17.1-18.5)	08761429		
		0.74-0.85 (18.6-21.6)	08761406 GOLD	0.74-0.85 (18.6-21.6)	08761407 GOLD	0.74-0.79 (18.6-20.1)	08761430	0.64-0.87 (16.3-22.1)	08643758 033-29-1198
						0.80-0.85 (20.2-21.6)	08761431		
0.86-1.13 (21.7-28.7)	08761360 Cable Pack #3	0.86-0.97 (21.7-24.6)	08761408 CLEAR	0.86-0.97 (21.7-24.6)	08761409 CLEAR	0.86-0.92 (21.7-23.4)	08761432	0.75-1.00 (19.1-25.4)	08643759 033-29-1199
						0.93-0.97 (23.5-24.6)	08761433		
		0.98-1.13 (24.7-28.7)	08761410 BLACK	0.98-1.13 (24.7-28.7)	08761411 BLACK	0.98-1.04 (24.7-26.4)	08761434	1.00-1.24 (25.4-31.5)	08643137 033-03-013
						1.05-1.13 (26.5-28.7)	08761435		
1.14-1.25 (28.8-31.8)	08761365 Cable Pack #4	1.14-1.25 (28.8-31.8)	08761412 BLUE GRAY	1.14-1.25 (28.8-31.8)	08761413 BLUE GRAY	1.14-1.19 (28.8-30.2)	08761436	1.00-1.24 (25.4-31.5)	08643137 033-03-013
						1.20-1.25 (30.3-31.8)	08761437		

Duct Packs

DUCT PACK		DUCT CLAMP		DUCT SEAL		CARRIER		FOAM CARRIER		CABLE GRIP	
Duct Size	Part No.	Duct OD	Part No.	Duct OD	Part No.	Duct ID	Part No.	Carrier OD	Part No.	Duct OD	Part No.
1" SDR 11/13.5	08761370 Duct Pack #1	1.315 (33.4)	08761414 BLUE	1.315 (33.4)	08761415 BLUE	1.121 (28.5)	08761250	1.25 (31.8)	08761439	1.00-1.24 (25.4-31.5)	08643137 033-03-013
1.25" SDR 11/13.5	08761375 Duct Pack #2	1.660 (42.2)	08761416 GREEN	1.660 (42.2)	08761417 GREEN	1.414 (35.9)	08761255	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016
1.5" SDR 11/13.5	08761380 Duct Pack #3	1.900 (48.3)	08761418 RED	1.900 (48.3)	08761419 RED	1.618 (41.1)	08761260	1.75 (44.5)	08761441	1.50-1.99 (38.1-50.5)	08643149 033-03-016
2" SDR 11/13.5	08761385 Duct Pack #4	2.375 (60.3)	08761420 GOLD	2.375 (60.3)	08761421 GOLD	2.023 (51.4)	08761265	2.00 (50.8)	08761442	2.00-2.49 (50.8-63.2)	08643155 033-03-017
27 mm	08761705	1.063 (27.0)	08761706 GREEN	1.063 (27.0)	08761708 GREEN	.906 (23.0)	08761715	1.25 (31.8)	08761439	1.00-1.24 (25.4-31.5)	08643137 033-03-013
32 mm	08761570	1.260 (32.0)	08761543 GOLD	1.260 (32.0)	08761545 GOLD	1.063 (27.0)	08761560	1.25 (31.8)	08761439	1.25-1.49 (31.8-37.8)	08643143 033-03-015
36 mm	08761621	1.417 (36.0)	08761624 RED	1.417 (36.0)	08761625 RED	1.181 (30.0)	08761643	1.25 (31.8)	08761439	1.25-1.49 (31.8-37.8)	08643143 033-03-015
37 mm	08761565	1.457 (37.0)	08761536 BLUE GRAY	1.457 (37.0)	08761538 BLUE GRAY	1.220 (31.0)	08761555	1.25 (31.8)	08761439	1.25-1.49 (31.8-37.8)	08643143 033-03-015
1.25" TRUE	08761673	1.500 (38.1)	08761663 CLEAR	1.500 (38.1)	08761665 CLEAR	1.250 (31.7)	08761670	1.50 (38.1)	08761440	1.25-1.49 (31.8-37.8)	08643143 033-03-015
40 mm	08761520	1.575 (40.0)	08761530 BLACK	1.575 (40.0)	08761535 BLACK	1.300 (33.0)	08761525	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016
42 mm	08761650	1.653 (42.0)	08761651 BLUE GRAY	1.653 (42.0)	08761652 BLUE GRAY	1.378 (35.0)	08761660	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016
44 mm	08761792	1.732 (44.0)	08761793 GOLD	1.732 (44.0)	08761794 GOLD	1.732 (44.0)	08761786	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016
46 mm	08761591	1.811 (46.0)	08761592 BLUE	1.811 (46.0)	08761594 BLUE	1.299 (33.0)	08761525	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016
50 mm	08761575	1.969 (50.0)	08761521 BLUE	1.969 (50.0)	08761523 BLUE	1.606 (40.8)	08761579	2.00 (50.8)	08761442	1.50-1.99 (38.1-50.5)	08643149 033-03-016
57 mm	08761690	2.244 (57.0)	08761691 BLACK	2.244 (57.0)	08761693 BLACK	1.969 (50.0)	08761585	2.00 (50.8)	08761442	2.00-2.49 (50.8-63.2)	08643155 033-03-017
60 mm	08761620	2.362 (60.0)	08761622 CLEAR	2.362 (60.0)	08761623 CLEAR	2.047 (52.0)	08761642	2.50 (63.5)	08761582	2.00-2.49 (50.8-63.2)	08643155 033-03-017
63 mm	08761580	2.480 (63.0)	08761522 GREEN	2.480 (63.0)	08761524 GREEN	2.024 (51.4)	08761581	2.50 (63.5)	08761582	2.00-2.49 (50.8-63.2)	08643155 033-03-017

Contact factory for other duct packs available.



LW Fiber Optic Cable Blower

CABLE BLOWING



While Condux's new LW Fiber Optic Cable Blower operates on the same principles as the HD model, there are several differences. The new LW Fiber Optic Cable Blower is compact and lightweight, making it ideally suited for your most difficult job sites and "last mile" fiber installations. An updated design has increased portability and made operation easier than ever. In addition, Condux's patented traction control system shuts down the blower when problems with cable slippage or duct blockage are detected, adding safety to every job and preventing costly cable damage.

Backed by years of fiber blowing experience, the LW Fiber Optic Cable Blower is designed for the installation of fiber optic cables with diameters from 0.23" (5.8 mm) to 1.13" (28.7 mm) into innerduct from 0.98" (25 mm) outer diameter to 1.97" (50.0 mm) outer diameter. Installation speeds approaching 300 ft/min (91.5 m/min) are possible.

Lightweight & Portable



The Lightweight Blower is extremely easy to handle and transport. The blower and all accessories including hydraulic hoses, cable and conduit packs and seal kits conveniently fit into a lightweight job box with wheels.

Easy to Use



Convenient tilting of the LW Fiber Optic Cable Blower for ease of pouring in lubricant. Easily install cable into rollers, then close and you are ready to start.



Belt Tractor Drive



Single belt tractor drive provides for smooth and quiet operation. The belt can be easily removed and replaced making maintenance fast and simple.

Hinged Air Block & Conduit Clamp

The Lightweight Blower features a hinged air block and a hinged conduit clamp that are easily secured and opened with the use of a spanner wrench.



Figure-8 Eliminator Trailer Communication

The Lightweight Blower's advanced electronics allow for communication between the blower and the Condux Figure-8 Eliminator Trailer ensuring cable protection. If a cable slippage or speed error shuts down the blower, the Eliminator Trailer is also shut down automatically. Conversely, if the Eliminator Trailer is shut down during the installation process, the Figure-8 Eliminator Trailer's Advanced Electronics stop the blower.



LW Fiber Optic Cable Blower



The Condux Lightweight Fiber Optic Cable Blower is easy to order. The base unit comes complete with a job box, hydraulic hoses and everything listed below in the "Common Parts Package." Complete the order by specifying the cable pack(s) and duct pack(s) necessary to meet your exact job requirements. A full description of the cable and duct packs is on page 116. You may order additional cable and duct packs at any time.



CABLE BLOWING



Build your own LW Fiber Optic Cable Blower Kit

Use a **Base Part Number** shown below and also indicate Cable Pack and Duct Pack options by name when placing your order.

Base Part No.	Description
08782000	LW Fiber Optic Cable Blower

Recommended Power Pack: 5.5 HP (see page 107)

Select your Cable Pack(s): (min. one required)

What size cable(s) will you be blowing?	When ordering specify:
<input type="checkbox"/> 0.23-0.34 in (5.8-8.8 mm)	Cable Pack #1
<input type="checkbox"/> 0.35-0.60 in (8.9-15.2 mm)	Cable Pack #2
<input type="checkbox"/> 0.61-0.85 in (15.3-21.6 mm)	Cable Pack #3
<input type="checkbox"/> 0.86-1.13 in (21.7-28.7 mm)	Cable Pack #4
<input type="checkbox"/> 0.43-0.55 in (11.0-14.0 mm)	Cable Pack #5
<input type="checkbox"/> All of the Above	Cable Pack #6*

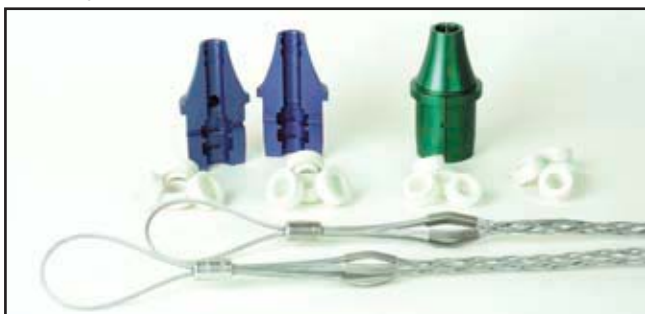
Select your Duct Pack(s): (min. one required)

What size duct(s) will you be blowing in?	When ordering specify:
<input type="checkbox"/> 1" SDR 11/13.5	Duct Pack #1
<input type="checkbox"/> 1.25" SDR 11/13.5	Duct Pack #2
<input type="checkbox"/> 1.5" SDR 11/13.5	Duct Pack #3
<input type="checkbox"/> All of the Above	Duct Pack #4*
<input type="checkbox"/> 25 mm	Duct Pack #5
<input type="checkbox"/> 32 mm	Duct Pack #6
<input type="checkbox"/> 36 mm	Duct Pack #7
<input type="checkbox"/> 37 mm	Duct Pack #8
<input type="checkbox"/> 1.25" TRUE	Duct Pack #9
<input type="checkbox"/> 40 mm	Duct Pack #10
<input type="checkbox"/> 42 mm	Duct Pack #11
<input type="checkbox"/> 44 mm	Duct Pack #12
<input type="checkbox"/> 46 mm	Duct Pack #13
<input type="checkbox"/> 50 mm	Duct Pack #14

*Available only on initial LW Fiber Optic Cable Blower order.

Cable and Duct Packs

Cable Packs include Cable Grips (for end of cable), Pneumatic Venturies and Cable Seals. See page 116 for ordering information.



Condux Lightweight Fiber Optic Cable Blower shown with: Common Parts Package (included with all units), Cable Pack #6 and Duct Pack #4.



Common Parts Package

Common Parts Package (included with all blower units) includes:

- Wiper Assembly
- Small Case w/Foam Insert
- 1 qt. Blowing Lubricant
- Allen Wrench (2.5 mm)
- Small Divided Case w/Parts Label
- O-Ring Seal Kit
- Spanner Wrench
- 2 Pin Extension Cord
- Canvas Bag
- Venturi Air Plug (Seal Disk)
- Capscrew Set (12-M04-0.7)
- Allen Wrench (3/32")
- 5/8" x 600 lb Swivel (16 mm x 2,669 N)
- Power Cord Assembly w/Lighter Plug
- 20' (6 m) Hydraulic Hose Set

Duct Packs include Cable Grip (for end of inner-duct), Cable Carrier, Innerduct Clamps, Innerduct Seals, Innerduct Pulling Eye & Foam Carriers. See page 116 for ordering information.





LW Fiber Optic Cable Blower

INSTALL

Replacement Cable Packs

CABLE BLOWING

PACK	CABLE PACK		VENTURI		CABLE SEAL		CABLE GRIP	
	Cable OD	P/N	Cable OD	P/N	Cable OD	P/N	Cable OD	P/N
1	0.23-0.34 (5.8-8.8)	08780393 Pack #1	0.23-0.34 (5.8-8.8)	08780281 Purple	0.23-0.28 (5.8-7.2)	08780406	0.21-0.35 (5.3-8.9)	08643754 033-29-1194
					0.29-0.34 (7.3-8.8)	08780407		
2	0.35-0.60 (8.9-15.2)	08780394 Pack #2	0.35-0.48 (8.9-12.2)	08780282 Blue	0.35-0.42 (8.9-10.7)	08761424	0.32-0.48 (8.1-12.2)	08643755 033-29-1195
					0.43-0.48 (10.8-12.2)	08761425		
			0.49-0.60 (12.3-15.2)	08780283 Green	0.49-0.55 (12.3-14.0)	08761426	0.42-0.61 (10.7-15.5)	08643756 033-29-1196
					0.56-0.60 (14.1-15.2)	08761427		
3	0.61-0.85 (15.3-21.6)	08780395 Pack #3	0.61-0.73 (15.3-18.5)	08780284 Red	0.61-0.67 (15.3-17.0)	08761428	0.53-0.74 (13.5-18.8)	08643757 033-29-1197
					0.68-0.73 (17.1-18.5)	08761429		
			0.74-0.85 (18.6-21.6)	08780285 Gold	0.74-0.79 (18.6-20.1)	08761430	0.64-0.87 (16.3-22.1)	08643758 033-29-1198
					0.80-0.85 (20.2-21.6)	08761431		
4	0.86-1.13 (21.7-28.7)	08780396 Pack #4	0.86-0.97 (21.7-24.6)	08780286 Clear Alum.	0.86-0.92 (21.7-23.4)	08761432	0.75-1.00 (19.1-25.4)	08643759 033-29-1199
					0.93-0.97 (23.5-24.6)	08761433		
			0.98-1.13 (24.7-28.7)	08780446 Black	0.98-1.04 (24.7-26.4)	08761434	1.00-1.24 (25.4-31.5)	08643137 033-03-013
					1.05-1.13 (26.5-28.7)	08761435		
5	0.43-0.55 (11.0-14.0)	08780245 Pack #5	0.43-0.55 (11.0-14.0)	08780111 Orange	0.45-0.49 (11.4-12.4)	08780116	0.42-0.61 (10.7-15.5)	08643756 033-29-1196
					0.50-0.55 (12.7-14.0)	08780117		
6	All of the Above	Pack #6	All of the above, available only on initial LW Fiber Optic Cable Blower order					

Replacement Duct Packs

PACK	DUCT PACK		DUCT CLAMP		DUCT SEAL		CARRIER		FOAM CARRIER		CABLE GRIP		INNERDUCT EYE
	Duct Size	P/N	Duct OD	P/N	Duct OD	P/N	Carrier	P/N	Carrier OD	P/N	Duct OD	P/N	ID Range
1	1" SDR 11/13.5	08780386 Pack #1	1.315 (33.4)	08780369 Blue	1.315 (33.4)	08780307 Blue	1.121 (28.5)	08761250	1.25 (31.8)	08761439	1.00-1.24 (25.4-31.5)	08643137 033-03-013	1.10-1.50 (27.9-38.1)
2	1.25" SDR 11/13.5	08780392 Pack #2	1.660 (42.2)	08780375 Green	1.660 (42.2)	08780051 Green	1.414 (35.9)	08761255	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016	1.10-1.50 (27.9-38.1)
3	1.5" SDR 11/13.5	08780397 Pack #3	1.900 (48.3)	08780404 Red	1.900 (48.3)	08780398 Red	1.618 (41.1)	08761260	1.75 (44.5)	08761441	1.50-1.99 (38.1-50.5)	08643149 033-03-016	1.34-1.74 (34.0-44.1)
4	All of the Above	Pack #4	All of the above, available only on initial LW Fiber Optic Cable Blower order										
5	25 mm	08780240 Pack #5	0.984 (25.0)	08780099 Orange	0.984 (25.0)	08780134 Orange	0.787 (20.0)	08780230	1.25 (31.8)	08761439	1.00-1.24 (25.4-31.5)	08643137 033-03-013	0.63-1.00 (16.0-25.4)
6	32 mm	08780385 Pack #6	1.260 (32.0)	08780368 Gold	1.260 (32.0)	08780306 Gold	1.063 (27.0)	08761560	1.25 (31.8)	08761439	1.25-1.49 (31.8-37.8)	08643143 033-03-015	0.80-1.25 (20.3-31.7)
7	36 mm	08780387 Pack #7	1.417 (36.0)	08780370 Red	1.417 (36.0)	08780308 Red	1.181 (30.0) 1.220 (31.0)	08761643 08761555	1.25 (31.8)	08761439	1.25-1.49 (31.8-37.8)	08643143 033-03-015	1.10-1.50 (27.9-38.1)
8	37 mm	08780388 Pack #8	1.457 (37.0)	08780371 Blue-Gray	1.457 (37.0)	08780309 Blue-Gray	1.220 (31.0)	08761555	1.25 (31.8)	08761439	1.25-1.49 (31.8-37.8)	08643143 033-03-015	1.10-1.50 (27.9-38.1)
9	1.25" TRUE	08780389 Pack #9	1.500 (38.1)	08780372 Clear Alum.	1.500 (38.1)	08780333 Clear Alum.	1.250 (31.7)	08761670	1.50 (38.1)	08761440	1.25-1.49 (31.8-37.8)	08643143 033-03-015	1.10-1.50 (27.9-38.1)
10	40 mm	08780390 Pack #10	1.575 (40.0)	08780373 Black	1.575 (40.0)	08780334 Black	1.299 (33.0)	08761525	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016	1.10-1.50 (27.9-38.1)
11	42 mm	08780391 Pack #11	1.653 (42.0)	08780374 Blue-Gray	1.653 (42.0)	08780335 Blue-Gray	1.378 (35.0)	08761660	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016	1.10-1.50 (27.9-38.1)
12	44 mm	08780545 Pack #12	1.732 (44.0)	08780546 Gold	1.732 (44.0)	08780547 Gold	1.496 (38.0)	08761786	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016	1.10-1.50 (27.9-38.1)
13	46 mm	08780460 Pack #13	1.811 (46.0)	08780466 Blue	1.811 (46.0)	08780461 Blue	1.299 (33.0)	08761525	1.50 (38.1)	08761440	1.50-1.99 (38.1-50.5)	08643149 033-03-016	1.10-1.50 (27.9-38.1)
14	50 mm	08780575 Pack #14	1.969 (50.0)	08780435 Blue	1.969 (50.0)	08780431 Blue	1.606 (40.0)	08761579	2.00 (50.8)	08761442	1.50-1.99 (38.1-50.5)	08643149 033-03-016	1.34-1.74 (34.0-44.1)



Compressed Air Cooler

Extreme heat can inhibit fiber optic cable installation and damage fiber optic cable and duct. When cable blowing, air is compressed and heat is generated. For example, air that enters a compressor at 100° F (37° C) exits the compressor at 350° F (176° C). At this temperature, fiber optic cable jacket and duct softening can occur. Heat problems can also occur if the duct run is exposed to direct sunlight. The Condux Compressed Air Cooler can help prevent heat damage to fiber optic cable and duct during cable blowing operations.

The Condux Compressed Air Cooler cools compressed air from a maximum temperature of 350° F (176° C), to within 20° F (11° C) of the ambient temperature. For example, if the ambient temperature is 100° F (37° C), air from the air compressor enters the air cooler at 350° F (176° C). That air will leave the cooler at approximately 120° F (49° C). Cooling the air reduces the chances of heat damage to the cable and duct.

The Condux Compressed Air Cooler also removes moisture from the air. Water from humid air can dilute cable blowing lubricant and collect in the duct run.

Use of the Condux Compressed Air Cooler is recommended when ambient air temperatures reach 90° F (32° C) or more and/or the duct is exposed to direct sunlight.

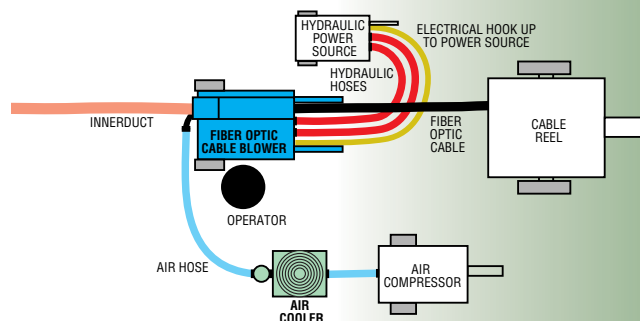


Minimum ambient operating temperature: 35° F (1° C)

Maximum inlet operating temperature: 350° F (176° C)

Maximum operating pressure: 250 psi (17 bar)

Part Number	Description
08761700	Air Cooler



How Much Air?

Pressure

During pressurized blowing applications, as the duct size increases and the pressure remains constant, the pulling force increases geometrically. When used properly, the amount of pulling force placed on the cable by the Condux Fiber Optic Cable Blower cable carrier remains below the cable's recommended maximum pulling tension for two reasons. First, the blower is designed for use with a maximum 2 inch (51 mm) diameter duct. Second, the maximum amount of pressure applied by the blower during installation never exceeds 150 psi (10.3 bar).

At that pressure, with a 2 inch (51 mm) duct, a maximum pulling tension of 482 lbs. (2,145 N) can be generated on the cable by the cable carrier. This is well below the 600 lbs. (2,668 N) recommended maximum pulling tension for most cable types. Ducts smaller than 2 inches (51 mm) or pressures lower than 150 psi (10.3 bar) will result in lower maximum pulling tensions.

Flow

Duct size also determines the compressor flow needed for proper installation. For innerducts from 1-1/4 inches (25-31 mm) in diameter, a 175-275 SCFM (5-8 cu meters/min) compressor is recommended. For innerducts from 1 1/2-2 inches (28-51 mm) in diameter, a 275-375 SCFM (8-11 cu meters/min) compressor is recommended. Compressor flow should be doubled if the distance exceeds 6,000-8,000 feet (1.8-2.4 km).





Innerduct Pressure Test Kits

CABLE BLOWING



Innerduct Pressure Test Kit

Use the Innerduct Pressure Test Kit to pressure test innerduct before setting up the Fiber Optic Cable Blower. The duct system must be able to withstand and hold 150 psi (10.3 bar) for the cable blower to work properly.

Part Number	Description
08761457	Pressure Test Kit for 1", 1 1/4" & 1 1/2" SDR 11 & 13.5 Innerduct <ul style="list-style-type: none"> ▪ Control Valve Assembly ▪ Seal-Off Heads ▪ Pulling Eyes ▪ Pulling Grips ▪ Tool Box

Other Components Available

Part Number	Description
08034318	Seal-Off Head for 2.00" SDR 11 & 13.5 Innerduct
08913328	Pulling Eye for 2.00" SDR 11 & 13.5 Innerduct
08643155	Pulling Grip for 2.00" SDR 11 & 13.5 Innerduct



Mandrel and Pressure Test Kit

Use the Mandrel and Pressure Test Kit to pressure test 1 1/4" (32 mm) innerduct. The duct system must not be kinked or crushed and must be able to withstand and hold 150 psi (10.3 bar) for the cable blower to work properly.

Part Number	Description
08761495	Mandrel and Pressure Test Kit for 1 1/4" (32 mm) Innerduct <ul style="list-style-type: none"> ▪ Seal-Off Control Valve Assembly ▪ Pressure Test Control Valve Assembly ▪ 1 1/4" (32 mm) Innerduct Seal-Off Head ▪ Test Mandrel for 1 1/4" (32 mm) Innerduct ▪ Extra Rubber Discs for Test Mandrel ▪ Innerduct Pulling Eye for 1 1/4" (32 mm) Innerduct ▪ Cable Grip for over 1 1/4" (32 mm) Innerduct ▪ Tool Box

08761237	Test Mandrel for 1 1/4" (32 mm) Innerduct
08761383	Test Mandrel for 1 1/2" (38 mm) Innerduct
08020610	Test Mandrel for 2" (51 mm) Innerduct

Why an Airtight Duct?

Duct integrity is essential for a successful cable blowing application. Leaks in the duct can lower pressure and greatly reduce installation distances. The duct system must be able to withstand and maintain 150 psi (10.3 bar) for the cable blower to function properly. Even with minimal leakage, the compressor will not be able to maintain pressure behind the cable carrier. This ultimately can reduce the pulling force of the cable carrier and can increase tractor drive pressure on the cable, resulting in increased cable stress.

Duct integrity should always be tested before attempting cable installation with the cable blower. The duct can be tested with a pressure test kit available from Condux or with the cable blower itself. Either way, an airtight duct system is an absolute necessity for cable blowing.

The main contributors to duct system leaks are the innerduct couplings. Condux recommends using one of the innerduct coupling methods shown on page 119.

CABLE CARRIER TENSION CHART

Innerduct Size	Nominal Innerduct I.D. in (mm)	Air Pressure—psi (bar)			
		90 (6.2)	110 (7.6)	130 (9.0)	150 (10.3)
1" SDR 13.5	1.121 (28.5)	89 (395)	109 (483)	128 (571)	148 (659)
1-1/4" SDR 13.5	1.414 (35.9)	141 (629)	173 (768)	204 (908)	236 (1,048)
1-1/2" SDR 13.5	1.618 (41.1)	185 (823)	226 (1,006)	267 (1,189)	308 (1,372)
2" SDR 13.5	2.023 (51.4)	289 (1,287)	354 (1,573)	418 (1,859)	482 (2,145)



Innerduct Couplings

Condu-Grip™ Innerduct Couplings

The one-piece Condu-Grip™ Threaded Coupling is capable of providing an airtight seal up to 150 psi and remains watertight under external pressures up to 50 psi. Field assembly is quick and easy, requiring only basic tools.

Part Number	Nominal Duct Size		Duct Type	Mean Duct O.D.	
	(in)	(mm)		(in)	(mm)
08566510	1.00	25	OD Controlled	1.315	33
08566520	1.25	32	OD Controlled	1.660	42
08566530	1.50	38	OD Controlled	1.900	48
08566533	1.50	38	SIDR-11 ID Controlled	1.890	48
08566540	2.00	51	OD Controlled	2.375	60



Patent Pending

Etco Double "E-Loc"® Innerduct Couplings

ETCO Double "E-Loc"® Innerduct Couplings are pressure tight up to 200 psi (13.8 bar) when restrained or buried and can maintain these pressures unrestrained. They are watertight, contain no metal parts and can be hand tightened.

Part Number	Nominal Duct Size	Duct Type	Duct O.D.		Coupling Length when tight	
			(in)	(mm)	(in)	(mm)
08676510	1" IPS	Smooth	1.315	33	6.25	159
	1.34" OD	Ribbed	1.340	34	6.25	159
08676511	1.42" OD	Smooth	1.420	36	6.25	159
	1½" SIDR 9	Ribbed	1.460	37	6.25	159
08676512	1.50" O.D. SIDR 11	Smooth	1.500	38	6.25	159
08676513	1¼" True 1.125 ID	Smooth	1.530	39	6.25	159
08676514	1¼" OD	Ribbed	1.575	40	6.25	159
	1.60" OD	Smooth	1.600	41	6.25	150
08676515	1¼" IPS	Smooth	1.660	42	6.25	159
08676516	1¼" OD	Ribbed	1.700	43	6.25	159
	1½" True SIDR 9	Ribbed	1.830	46	8.25	210
08676517	1½" True SIDR 9	Smooth	1.830	46	8.25	210
08676518	1½" IPS	Smooth	1.900	48	8.25	210
08676520	2" IPS	Smooth	2.375	60	8.50	216



Split Innerduct Couplings

Reusable aluminum coupling for temporarily joining all types of innerduct during the cable blowing process. Other sizes are under development.

Part Number	Nominal Duct Size		Duct Type	Mean Duct O.D.	
	(in)	(mm)		(in)	(mm)
08676710	1.00	25	1" SDR 11 & 13.5	1.315	33
08676712	1.25	32	1¼" SDR 11 & 13.5	1.660	42
08676715	1.50	38	1½" SDR 11 & 13.5	1.900	48
08676720	2.00	51	2" SDR 11 & 13.5	2.375	60



Replacement Part Kits

Part Number	Description	Package
		Qty.
08676709	1" (25 mm) Seal Kit	4
08676713	1¼" (32 mm) Seal Kit	4
08676716	1½" (38 mm) Seal Kit	4
08676719	2" (51 mm) Seal kit	4
08676711	Bolt Kit	16



Replacement Seal Kits



Replacement Bolt Kit