

MATERIAL HANDLING

ENCLOSED BELT CONVEYORS



PROVEN & DEPENDABLE™

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MATERIAL HANDLING SOLUTIONS



PROVEN & DEPENDABLE

From receiving to load-out, each day your facility moves, weighs, loads, and samples millions of tons of material. The success of your operation relies not only on the quality of the commodity but the dependability of the equipment used to keep it moving. InterSystems' bulk material handling systems offer the speed and reliability you need to satisfy customers and grow profits.

From a modest beginning in 1959 as a maker of cardboard doors for rail boxcars, InterSystems has evolved into a worldwide manufacturer of a full line of bulk material handling equipment. Placing a customer-centric focus on the engineering and manufacturing process, InterSystems' product solutions include bucket elevators, bulk weighers, enclosed belt conveyors, en-masse and self-cleaning en-masse conveyors, gravity screeners, truck probes, automatic samplers, micro ingredient systems, bolted bin systems and distributors. Purchased by GSI in 2014, InterSystems' material handling equipment can be found around the world at grain elevators, in processing plants and at port facilities handling a wide variety of commodities including grains, powders, rock and wood pellets.

InterSystems believes that "custom" is standard, displaying a willingness to change in order to meet the needs of your specific applications with a solution. Behind each product line is an engineer leading a team dedicated to design improvements which promote efficiency and keep current with changes in industry regulations. Our in-house customer service team is on-call to assist with replacement parts or installation questions and can deploy a field technician to analyze problems and recommend solutions. InterSystems does it all while maintaining industry-leading delivery times.



INTERSYSTEMS ENCLOSED BELT CONVEYORS

With a proven track record of success in the design and manufacture of drag conveyors, InterSystems introduced a line of Enclosed Belt Conveyors in 1999, meeting your demands for higher capacity requirements, longer lengths and more efficient horsepower. Through our own in-house engineering, InterSystems' Enclosed Belt Conveyors have evolved to satisfy the needs of high volume grain operations, feed plants, ethanol plants and processing facilities.

InterSystems continually works to improve the design, performance and features of Enclosed Belt Conveyors to provide years of reliable performance under the toughest conditions.

TAILS: InterSystems' pulley diameter is typically larger.

HEADS: Maintenance and inspection are more convenient with InterSystems' two-piece conveyor head design.

INTERMEDIATE SECTIONS: The optional 3i model (patent #US8225926) features independent idlers for the deepest trough profile and highest capacity belt widths.

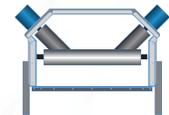
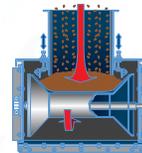
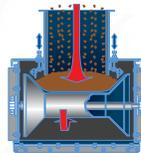
CONVEYOR BELTING: InterSystems' established formula for calculating belt tension promotes longer belt life and reduced maintenance costs.

BELT LOADERS: Skirting included on all loaders helps center the feed and keep material on the belt.

SHAFT SIZING: InterSystems' calculations of shaft size consider bending moment, torsion, amount of load applied and distance between bearing centers.

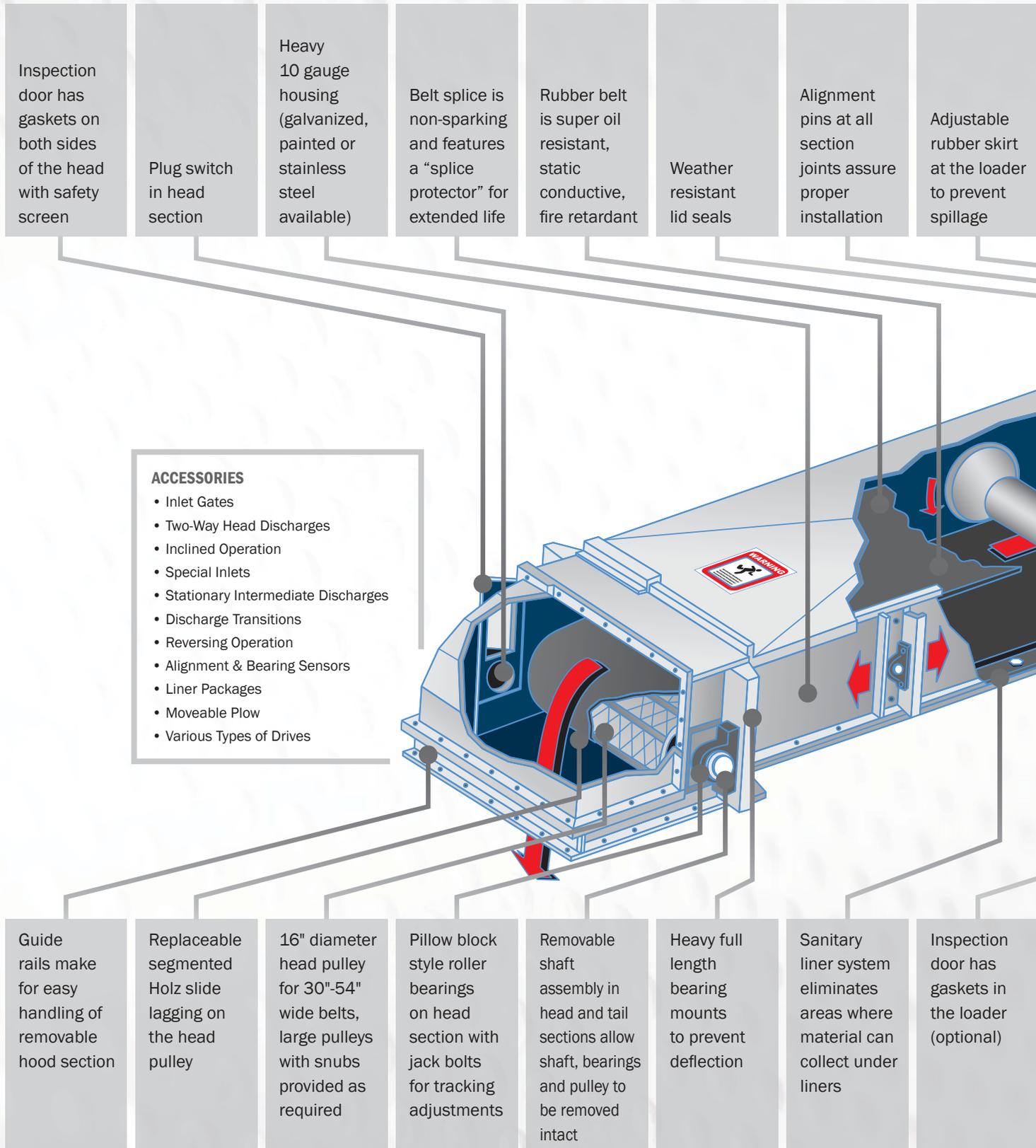
HORSEPOWER: Requirements for horsepower are calculated through a precise process.

INTERMEDIATE DISCHARGES: InterSystems has designed intermediate discharges to bring the belt up at a precise degree of incline before passing through a series of two pulleys for flow-through or discharge which controls unnecessary material carry-over or splash.



	ROLLERFLO™	DEEP TROUGH ROLLERFLO™	3i ROLLERFLO™
BELT WIDTH	18" - 54"	30" - 54"	30" - 72"
CAPACITIES	5,000 - 50,000 BPH	15,000 - 60,000 BPH	20,000 - 125,000 BPH
IDLER TYPE	Spool	Spool	3 Separate Idlers
INTERMEDIATE DISCHARGES	Movable Plow or Tripper	None	Tripper
BELT LIFE	Better	Good	Best

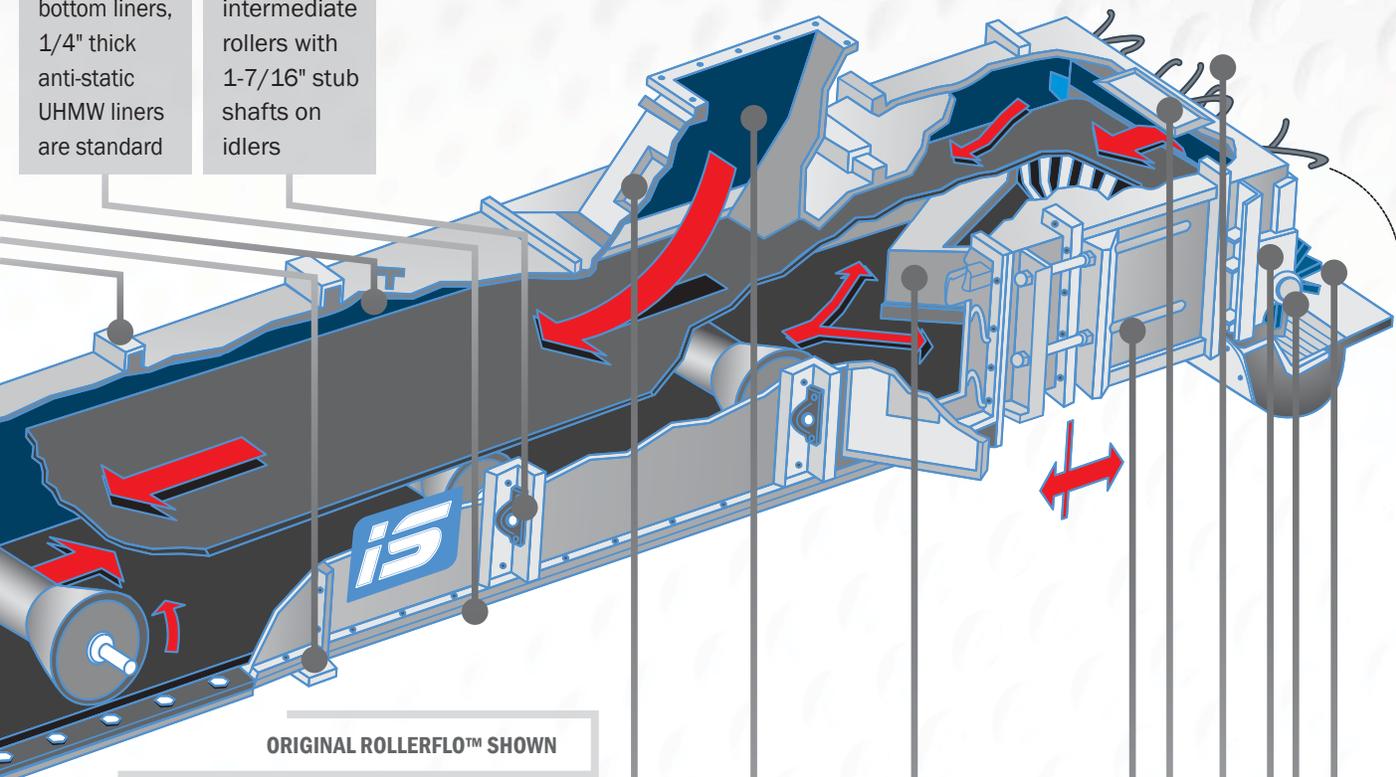
INTERSYSTEMS ENCLOSED BELT CONVEYORS



FEATURES

Removable, bolted bottoms for easy access to bottom liners, 1/4" thick anti-static UHMW liners are standard

Pillow block style bearings on intermediate rollers with 1-7/16" stub shafts on idlers



ORIGINAL ROLLERFLO™ SHOWN

1/4" thick urethane liners standard in head section and primary loaders

V-plow assembly has replaceable skirting board

Extra heavy 1-1/4" dia. Acme thread on large stationary take-up screw makes tension adjustments easy

Inspection door has gaskets on top of tail section

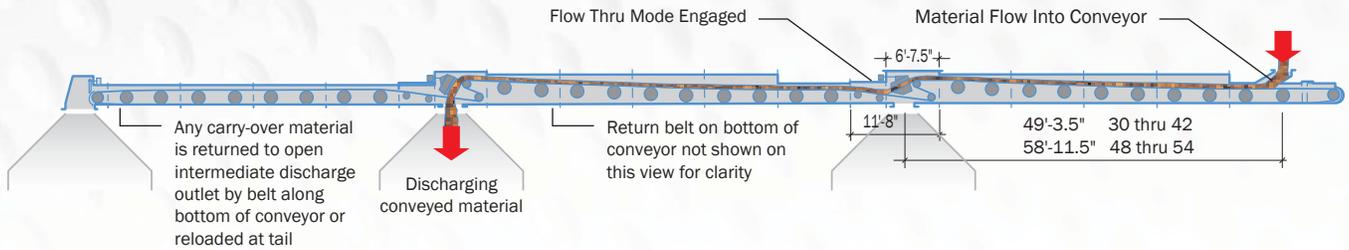
Reloading tail with self-cleaning spiral wing pulley with integral flipper mounts, splice protectors and a quick-clamped hinged tail shroud

Pillow block roller bearings on tail sections

UHMW shafts seals on all shafts to keep dust in

Motion sensor for tail section

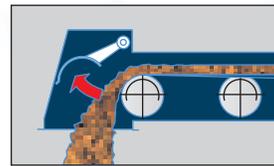
INTERMEDIATE DISCHARGE



RELOAD DISCHARGE HEAD (OPTIONAL)

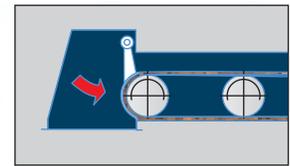
When used with the Intermediate Discharge Unit, the Reload Discharge Head will capture carry-over material and return it to the main material flow or open discharge outlet.

OPEN DISCHARGE



Discharged Material

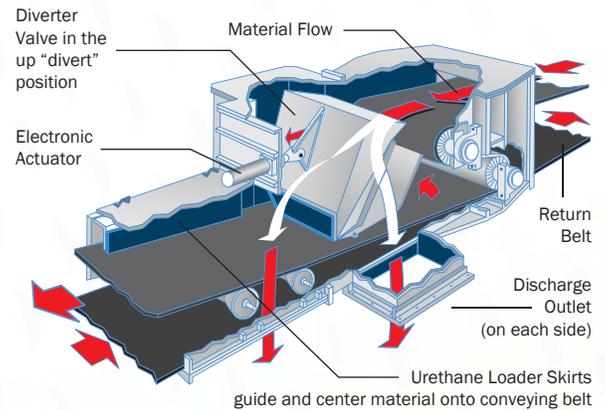
CLOSED/CARRY-OVER CONTROL



Material carry-over is captured and returned under the returning belt

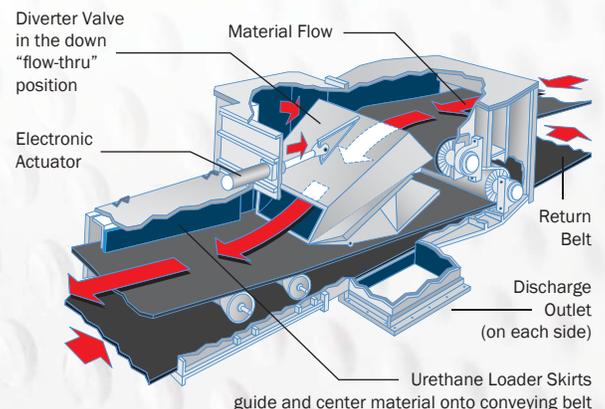
DISCHARGE MODE

When the diverter valve is in the discharge mode, the conveyed material discharges off of the elevated incoming belt and is split by a V-shaped portion of the diverter valve. The material falls to the sides of the conveyor belt and into the discharge chutes on each side. An optional field-fabricated spout is built to bring the two discharges into one where it is then discharged into a bin. A linear actuator controls the diverter valve movement and is in a retracted position, eliminating the potential for any creep on the valve.



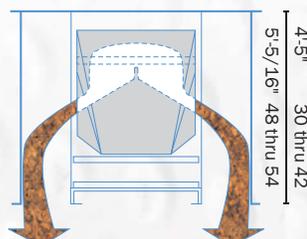
FLOW-THRU MODE

When the diverter valve is in the flow-thru mode, the conveyed material discharges off of the elevated incoming belt and flows through the center of the diverter chute and onto the continuing belt. The material travels through and onto the desired discharge point. All areas of wear are lined with replaceable liners. A liner actuator controls the diverter valve movement and is in an extended position. Inspection doors are located at all appropriate areas.



SPLIT DISCHARGE

Discharging material is split equally and delivered down on each side of the belt and into the discharge outlets.



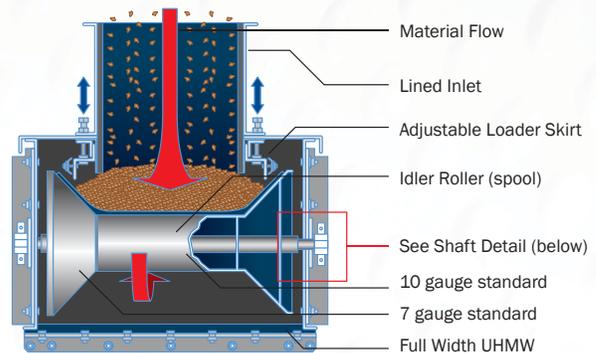
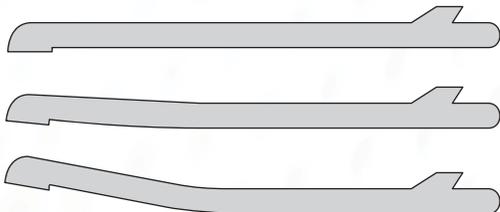
ORIGINAL AND DEEP TROUGH ROLLERFLO™

ORIGINAL ROLLERFLO™ ENCLOSED BELT CONVEYOR

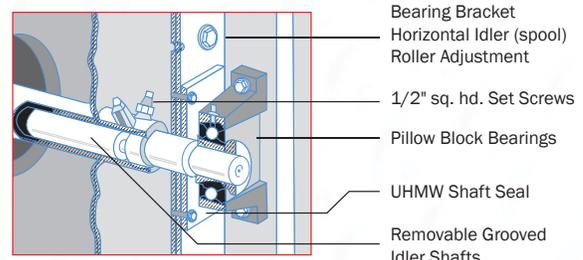
- Heavy duty thick steel idler rollers (spools) with machined (reamed) shaft bores
- Stub idler shafts for easy removal when used in tunnel applications
- Shafts are attached with 90° offset double lock set screws
- Shafts are pre-grooved and stepped for stable lateral position
- One piece idler rollers with solid hub plates
- Idler rollers with extra outer rim for strength and better belt alignment

OPERATIONAL CONFIGURATIONS

InterSystems Enclosed Belt Conveyors are very adaptable and may be configured in a series of horizontal and/or inclined segments as shown. An application that might require multiple conveyor runs, drives and transitions, may be accomplished with a single belt conveyor and with less horsepower.



CROSS SECTION WITH INLET



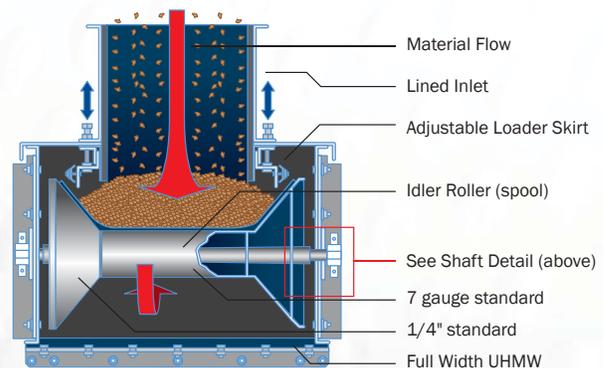
SHAFT DETAIL

DEEP TROUGH ROLLERFLO™ ENCLOSED BELT CONVEYOR

Thicker idler construction for prolonged life.

Deeper trough allows for higher capacity over original RollerFLO™ with same width belt.

Same footprint as the original RollerFLO.



CROSS SECTION WITH INLET

SPECIFICATIONS

ORIGINAL ROLLERFLO™ CAPACITIES

CONVEYOR MODEL	100 FPM (0.51 MPS)	200 FPM (1.02 MPS)	300 FPM (1.52 MPS)	400 FPM (2.03 MPS)	450 FPM (2.29 MPS)	500 FPM (2.54 MPS)	550 FPM (2.79 MPS)	600 FPM (3.05 MPS)	650 FPM (3.30 MPS)	700 FPM (3.56 MPS)
BELT SPEED: FEET BELT SPEED: FEET PER MINUTE (FPM) / METERS PER SECOND (MPS)										
CAPACITY - BUSHELS PER HOUR										
18	1059	2118	3176	4235	4765	5294	5823	6353	6353	7412
24	1839	3677	5516	7534	8273	9193	10112	11031	11950	12870
30	3047	6095	9142	12190	13713	15237	16761	18284	19808	21332
36	4189	8377	12566	16755	18849	20944	23038	25132	27227	29321
42	5422	10843	16265	21687	24398	27109	29819	32530	35241	37952
48	6747	13493	20240	26986	30359	33733	37106	40479	43852	47226
54	8163	16326	24489	32652	36734	40815	44897	48978	53060	57141
CAPACITY - TONS PER HOUR										
18	32	64	95	127	143	159	175	191	206	222
24	55	111	165	221	248	276	303	331	359	386
30	91	183	274	366	411	457	503	549	594	640
36	126	251	377	503	565	628	691	754	817	880
42	163	325	488	651	732	813	895	976	1057	1139
48	202	405	607	810	911	1012	1113	1214	1316	1417
54	245	490	735	980	1102	1224	1347	1469	1592	1714
CAPACITY - METRIC TONS PER HOUR										
18	28	57	85	113	128	142	156	170	184	199
24	49	98	148	197	222	246	271	295	320	345
30	82	163	245	327	367	408	449	490	531	571
36	112	224	337	449	505	561	617	673	729	785
42	145	290	436	581	653	726	799	871	944	1017
48	181	361	542	723	813	904	994	1084	1175	1265
54	219	437	656	875	984	1093	1203	1312	1421	1531
CAPACITY - CUBIC FEET PER HOUR										
18	1324	2647	3971	5294	5956	6618	7279	7941	8603	9265
24	2298	4596	6894	9193	10342	11491	12640	13789	14938	16087
30	3809	7619	11428	15237	17142	19046	20951	22856	24760	26665
36	5236	10472	15708	20944	23561	26179	28797	31514	34033	36651
42	6777	13554	20331	27109	30497	33886	37274	40663	44051	47440
48	8433	16866	25299	33733	37949	42166	46382	50599	54815	59032
54	10204	20408	30611	40815	45917	51019	56121	61223	66324	71426

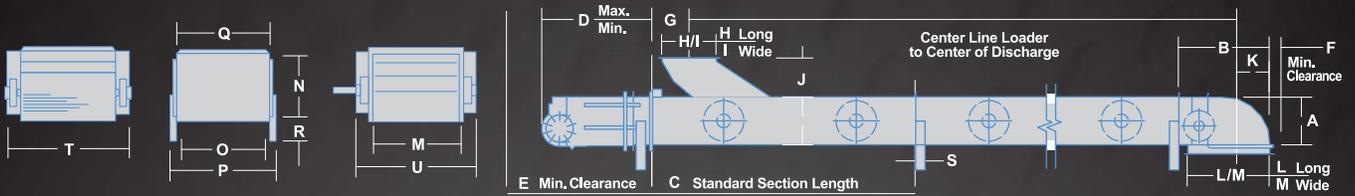
DEEP TROUGH ROLLERFLO™ CAPACITIES

CONVEYOR MODEL	100 FPM (0.51 MPS)	200 FPM (1.02 MPS)	300 FPM (1.52 MPS)	400 FPM (2.03 MPS)	450 FPM (2.29 MPS)	500 FPM (2.54 MPS)	550 FPM (2.79 MPS)	600 FPM (3.05 MPS)	650 FPM (3.30 MPS)	700 FPM (3.56 MPS)
BELT SPEED: FEET BELT SPEED: FEET PER MINUTE (FPM) / METERS PER SECOND (MPS)										
CAPACITY - BUSHELS PER HOUR										
30	3477	6954	10431	13908	15646	17385	19123	20862	22600	24339
36	4798	9596	14394	19192	21591	23990	26389	28788	31187	33586
42	6211	12422	18633	24844	27949	31054	34160	37265	40371	43476
48	7716	15431	23147	30862	34720	38578	42435	46293	50151	54009
54	9312	18624	27936	37248	41904	46560	51216	55872	60528	65184
CAPACITY - TONS PER HOUR										
30	104	208	312	415	467	519	571	623	675	727
36	143	287	430	573	645	717	788	860	932	1003
42	186	371	557	742	835	928	1020	1113	1206	1299
48	230	461	691	922	1037	1152	1268	1383	1498	1613
54	278	556	834	1113	1252	1391	1530	1669	1808	1947
CAPACITY - METRIC TONS PER HOUR										
30	94	188	283	377	424	471	518	565	612	660
36	130	260	390	520	585	650	715	780	845	910
42	168	337	505	673	757	841	926	1010	1094	1178
48	209	418	627	836	941	1045	1150	1254	1359	1463
54	252	505	757	1009	1135	1262	1388	1514	1640	1766
CAPACITY - CUBIC FEET PER HOUR										
30	4327	8655	12982	17309	19473	21637	23800	25964	28128	30291
36	5971	11943	17914	23886	26872	29857	32843	35829	38814	41800
42	7730	15460	23190	30919	34784	38649	42514	46379	50244	54109
48	9602	19205	28807	38410	43211	48012	52813	57615	62416	67217
54	11589	23179	34768	46357	52152	57946	63741	69536	75330	81125



SPECIFICATIONS

ORIGINAL AND DEEP TROUGH ROLLERFLO™



MODEL	A	B	C	D MIN*	D MAX*	E*	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	APPROX. WT. (LBS./FOOT)**	
																							LOADED	EMPTY
18***	25	40	116	48.75	66.75	77	6.75	20	24	8	17.25	18	36	21.5	21	21	29.5	24.63	11	4	35.75	33.38	90 lbs	80 lbs
24***	25	40	116	48.75	66.75	77	6.75	20	24	14	17.25	18	36	27.5	21	27	35.5	30.63	11	4	41.75	39.38	106 lbs	87 lbs
30	31	40	116	50.75	68.75	84	6.75	20	24	16	17.25	18	36	33.5	27	32	40.5	35.63	11	4	49.5	47.88	138 lbs	100 lbs
36	31	40	116	50.75	68.75	84	6.75	20	24	22	17.25	18	36	39.5	27	38	46.5	41.63	11	4	55.5	53.88	158 lbs	110 lbs
42	31	40	116	50.75	68.75	84	6.75	20	24	28	17.25	18	36	45.5	27	44	52.5	47.63	11	4	61.5	59.88	183 lbs	120 lbs
48	31	40	116	50.75	68.75	84	6.75	20	24	34	17.25	18	36	51.5	27	50	58.5	53.63	11	4	67.5	65.88	214 lbs	133 lbs
54	31	40	116	50.75	68.75	84	6.75	20	24	40	17.25	18	36	57.5	27	56	64.5	59.63	11	4	73.5	71.88	244 lbs	146 lbs

* Based on 18.00" long take-up. For actual take-up required, see certified drawing.

** Combined live and dead load and based on material weight of 48 lbs per cubic foot.

*** Not available in Deep Trough RollerFLO™.

Capacities are rated under ideal conditions with dry material being properly fed into the conveyor.

The capacities given are for reference only. Please contact InterSystems for capacities in your specific application.

Based on 48 pounds per cubic foot (768 Kg/cm) material density.

Specifications are subject to change without notice.

3i ROLLERFLO™

TRIPLE IDLER ENCLOSED BELT MODEL: 3i ROLLERFLO™

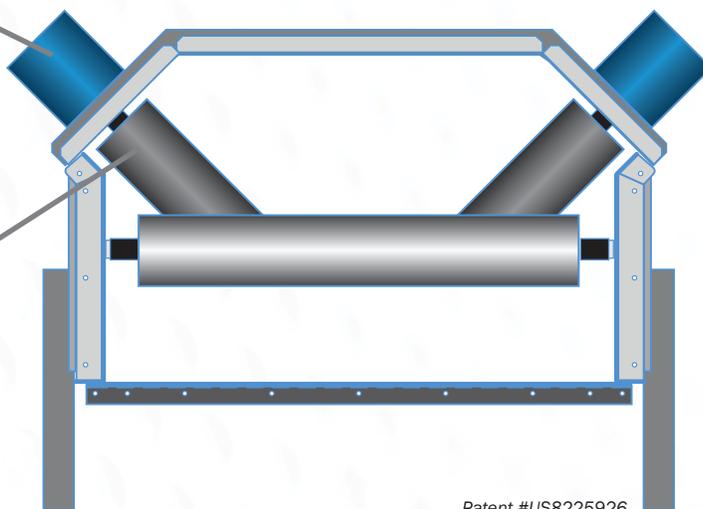
The 3i RollerFLO™ Enclosed Belt Conveyor (patent #US8225926) features heavy duty idlers, a reinforced top channel and external flange bearings. The idler and belt life spans are improved by the use of independent idlers which eliminates differential speeds typically found with the use of spool-type idlers. Independent idlers also allow for deeper trough profiles and higher capacity belt widths.

EXTERNAL FLANGE BEARINGS

- Outside of conveyor enclosure to safeguard against explosion hazards
- Easily serviced

HEAVY DUTY IDLERS

- Top support brackets with easy five-bolt removal
- 6" idlers, 7 gauge standard
- Rugged solid shaft and tube cantilever idler construction

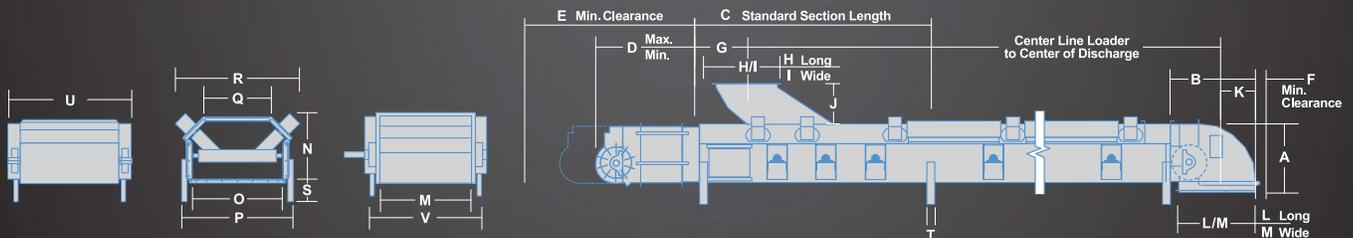


Patent #US8225926

SPECIFICATIONS

3i ROLLERFLO™

CONVEYOR MODEL	100 FPM (0.51 MPS)	200 FPM (1.02 MPS)	300 FPM (1.52 MPS)	400 FPM (2.03 MPS)	450 FPM (2.29 MPS)	500 FPM (2.54 MPS)	550 FPM (2.79 MPS)	600 FPM (3.05 MPS)	650 FPM (3.30 MPS)	700 FPM (3.56 MPS)
BELT SPEED: FEET BELT SPEED: FEET PER MINUTE (FPM) / METERS PER SECOND (MPS)										
CAPACITY - BUSHELS PER HOUR										
30	3605	7211	10816	14422	16225	18027	19830	21633	23435	25238
36	5185	10371	15556	20741	23334	25927	28519	31112	33705	36297
42	7261	14522	21783	29044	32675	36306	39936	43567	47197	50828
48	9276	18552	27828	37105	41743	46381	51019	55657	60295	64933
54	11383	22766	34149	45532	51223	56915	62606	68298	73989	79681
60	13582	27163	40745	54326	61117	67908	74699	81490	88280	95071
66	15872	31744	47616	63488	71424	79360	87296	95232	103168	111104
72	18254	36508	54763	73017	82144	91271	100398	109525	118652	127779
CAPACITY - TONS PER HOUR										
30	108	215	323	431	485	538	592	646	700	754
36	155	310	465	620	697	774	852	929	1007	1084
42	217	434	651	868	976	1084	1193	1301	1410	1518
48	277	554	831	1108	1247	1385	1524	1662	1801	1940
54	340	680	1020	1360	1530	1700	1870	2040	2210	2380
60	406	811	1217	1623	1826	2028	2231	2434	2637	2840
66	474	948	1422	1896	2133	2370	2607	2845	3082	3319
72	545	1090	1636	2181	2454	2726	2999	3271	3544	3817
CAPACITY - METRIC TONS PER HOUR										
30	98	195	293	391	440	488	537	586	635	684
36	141	281	422	562	632	703	773	843	913	984
42	197	394	590	787	885	984	1082	1181	1279	1377
48	251	503	754	1005	1131	1257	1382	1508	1634	1759
54	308	617	925	1234	1388	1542	1696	1851	2005	2159
60	368	736	1104	1472	1656	1840	2024	2208	2392	2576
66	430	860	1290	1720	1935	2150	2365	2581	2796	3011
72	495	989	1484	1979	2226	2473	2720	2968	3215	3462
CAPACITY - CUBIC FEET PER HOUR										
30	4487	8974	13462	17949	20192	22436	24680	26923	29167	31410
36	6453	12907	19360	25814	29041	32267	35494	38721	41947	45174
42	9037	18074	27111	36148	40666	45184	49703	54221	58740	63258
48	11545	23089	34634	46179	51951	57724	63496	69268	75041	80813
54	14167	28334	42500	56667	63751	70834	77918	85001	92084	99168
60	16903	33806	50709	67613	76064	84516	92967	101419	109870	118322
66	19754	39507	59261	79015	88891	98768	108645	118522	128399	138276
72	22718	45437	68155	90874	102233	113592	124951	136311	147670	159029



MODEL	A	B	C	D MIN*	D MAX*	E*	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	APPROX. WT. (LBS./FOOT)**	
																								LOADED	EMPTY
30	31	40	116	50.75	68.75	84	6.75	23	30	16	20	18	36	33.5	27	32	42.5	22.79	50.4	11	4	48.75	48	148 lbs	112 lbs
36	31	40	116	50.75	68.75	84	6.75	23	30	22	20	18	36	39.5	27	38	48.5	28.79	56.4	11	4	54.75	54	182 lbs	130 lbs
42	32.5	40	116	50.75	68.75	84	6.75	23	30	28	20	18	36	45.5	28.5	44	54.5	33	60.82	11	4	60.75	60	221 lbs	148 lbs
48	32.5	40	116	50.75	68.75	84	6.75	23	30	34	20	18	36	51.5	28.5	50	60.5	39	66.82	11	4	66.75	66	261 lbs	168 lbs
54	32.5	40	116	50.75	68.75	84	6.75	23	30	40	20	18	36	57.5	28.5	56	66.5	45	72.82	11	4	72.75	72	302 lbs	188 lbs
60	34.5	40	116	50.75	68.75	84	6.75	29	42	42	26	18	36	63.5	30.5	62	72.5	47	81.65	11	4	78.75	78	358 lbs	222 lbs
66	34.5	40	116	50.75	68.75	84	6.75	29	42	48	26	18	36	69.5	30.5	68	78.5	53	87.65	11	4	84.75	84	412 lbs	252 lbs
72	34.5	40	116	50.75	68.75	84	6.75	29	42	54	26	18	36	75.5	30.5	74	84.5	59	93.65	11	4	90.75	90	465 lbs	282 lbs

* Based on 18.00" long take-up. For actual take-up required, see certified drawing.

** Combined live and dead load and based on material weight of 48 lbs per cubic foot.

Capacities are rated under ideal conditions with dry material being properly fed into the conveyor. The capacities given are for reference only. Please contact InterSystems for capacities in your specific application. Based on 48 pounds per cubic foot (768 Kg/cm) material density. Specifications are subject to change without notice.

COMPLETE YOUR GSI SYSTEM

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40-SERIES™ GRAIN BIN

When determining the best system for your operation, we know that what's protected inside the bin is what counts most. Each GSI bin is efficiently designed to handle maximum loads for unmatched strength. All GSI bins are constructed using the highest-strength steel available.



TOWERS AND CATWALKS

GSI offers a full line of structures to support material handling equipment. Built to perform for the long haul, GSI's all new QuickBolt™ Towers and Catwalks are engineered to your facility's layout, taking wind, seismic and snow loading into consideration. GSI structures feature bolt-up assembly and hot-dipped galvanized finish.



ZIMMERMAN TOWER DRYERS

Not all tower dryers are created equal. What sets Zimmerman dryers apart is over 50 years of innovative design expertise and industry proven drying principles. The result is an easy-to-operate, easy-to-maintain, durable, fuel-efficient grain dryer, supported by an expert dealer network.



PREMIUM TRAINING, SERVICE & SUPPORT

InterSystems reaches a worldwide market and numerous industries with expertise in the manufacturing of material handling products and industrial sampling systems. Purchased by GSI in 2014, InterSystems is based in Omaha, Nebraska and operates out of a 200,000 square foot state-of-the-art manufacturing facility. InterSystems is ISO 9001 and 14001 certified.



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